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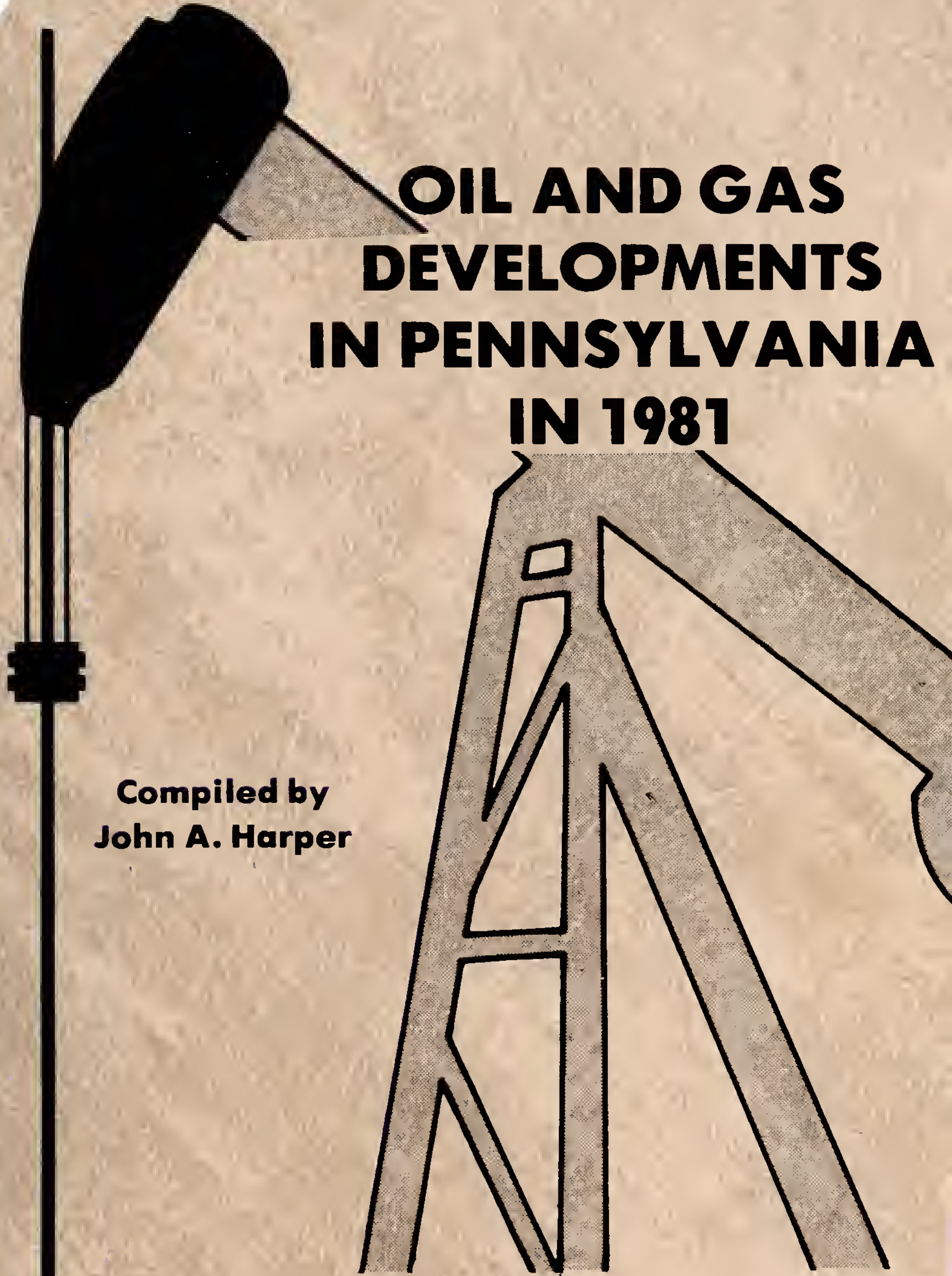

OIL AND GAS DEVELOPMENTS IN PENNSYLVANIA IN 1981

Compiled by
John A. Harper

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
OFFICE OF RESOURCES MANAGEMENT
BUREAU OF
TOPOGRAPHIC AND GEOLOGIC SURVEY
Arthur A. Socolow, State Geologist

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Progress Report 195

OIL AND GAS DEVELOPMENTS IN PENNSYLVANIA IN 1981

Compiled by John A. Harper
Pennsylvania Geological Survey

PENNSYLVANIA GEOLOGICAL SURVEY

FOURTH SERIES

HARRISBURG

1982

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OIL AND GAS DEVELOPMENTS IN PENNSYLVANIA IN 1981

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ABSTRACT

Oil production totaled 3,729,214 barrels in 1981, a 27 percent increase over 1980 production. Oil reserves increased 1 percent from 50,559,000 barrels in 1980 to 50,946,000 barrels in 1981. Leading counties for production of oil were Warren, McKean, and Venango. In 1981 secondary recovery of oil in the Bradford field accounted for only 26 percent of the state total. No new waterflood projects were begun during the year, but 131 waterflood, micellar-polymer, or microemulsion project wells were completed in Elk, McKean, Warren, and Venango Counties in established projects. All of the micellar-polymer and microemulsion (tertiary oil recovery) projects are located in the Bradford field.

Gas production increased 26 percent from 97,439 million cubic feet in 1980 to 122,454 million cubic feet in 1981. Gas reserves, including stored recoverable gas, increased 7 percent from 2,316,119 million cubic feet in 1980 to 2,481,168 million cubic feet in 1981. Stored recoverable gas also increased 7 percent, to 596,518 million cubic feet.

The price for all crude oil and oil products produced in the United States was deregulated by the President early in 1981. The price of Penn Grade Crude oil was $38.00 per barrel at the beginning of 1981, but dropped off to $35.00 per barrel on June 17. The price remained stable for the remainder of the year. Gas prices were subject to Natural Gas Policy Act price ceilings. The well-head price of one thousand cubic feet of natural gas ranged from a low of $0.24 under old contracts to $5.10 for high-cost gas produced from tight formations (the Lower Silurian Medina Group).

The total number of wells reported drilled in 1981 was 3,554, an increase of 76 percent or 1,534 wells over 1980. Total footage drilled was 9,007,314 feet, a 65 percent increase over the 1980 total of 5,461,275 feet. The total number of oil wells reported was 1,641, or 864 more wells than reported in 1980. The most active counties for oil well drilling were Venango, Warren, and McKean, accounting for 85 percent of all oil wells drilled in the state. A total of 1,677 gas wells was reported in 1981 for a 52 percent increase over 1980. The most active counties for gas well drilling were Indiana, Crawford, Erie, Westmoreland, Jefferson, and Clearfield. Eighty-six percent of all gas wells reported in 1981 were drilled in these counties. There were 16 combination oil and gas wells

reported in 1981, a decrease of 33 percent (8 wells) over the previous year. Fifty percent of these wells were drilled in Erie County.

Exploratory drilling in 1981 increased 207 percent (273 wells) over 1980, and the success rate for these wells was 94 percent. Development drilling increased 65 percent in 1981, for a success rate of 98 percent.

Seismic exploration activity increased 21 percent, from 45.25 crew-months in 1980 to 54.75 crew-months in 1981. Seismic crews operated in 28 counties in Pennsylvania during the year, at a total expenditure of $12,300,000.

Present activity within the Oil and Gas Geology Division of the Pennsylvania Geological Survey includes a study of the oil and gas geology of the southwestern Pennsylvania district (Beaver, Allegheny, Washington, and Greene Counties), and a reservoir study of the Athens and Geneva gas fields (Medina Group production) in Crawford County.

INTRODUCTION

Drillers' records and location plats, filed with the Division of Oil and Gas Regulation of the Bureau of Topographic and Geologic Survey,* form the basis of the statistics on oil and gas drilling presented in this report. Only those wells for which drilling records were received during the calendar year 1981 are reported. This includes delayed records of certain wells drilled in years previous to 1981, but does not include 1981 wells for which no records were received. Oil production and reserve figures were supplied by the Penn Grade Crude Association of Bradford, Pennsylvania. Mr. John Boomer, Consolidated Gas Supply Corporation, supplied data on natural gas production and reserves.

ACKNOWLEDGEMENTS

We gratefully acknowledge the following industry and government organizations who helped in providing the information needed to construct this report: the American Gas Association; the American Petroleum Institute; the Appalachian Oil Scouts Association; the Bureau of Statistics of the Pennsylvania Department of Commerce; the Division of Minerals of the Bureau of Forestry, Pennsylvania Department of Environmental Resources; the Penn Grade Crude Association; Petroleum Information Corporation; and the U. S. Department of Energy.

Special thanks are extended to all of the operators, companies, and personnel who released natural gas production statistics and provided pertinent

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*In July 1982 the Division of Oil and Gas Regulation became the Division of Permitting within the newly created Bureau of Oil and Gas Regulation. In this report the Division is referred to by its 1981 name.

information on producing formations, producing intervals, drilling costs, and oil and gas prices.

Cheryl L. Cozart of the Oil and Gas Geology Division, Bureau of Topographic and Geologic Survey, assisted in the compilation of this report.

PRODUCTION AND RESERVES

OIL PRODUCTION

In 1981 Pennsylvania oil well operators produced 3,729,214 barrels (bbl) of Penn Grade crude oil from 25,954 wells in the Upper Devonian and Lower Silurian sandstones of western Pennsylvania. This constitutes a 27 percent increase over the 1980 production figure of 2,940,187 bbl. The total includes 64,327 bbl of oil produced from the Lower Silurian Medina Group in Erie and Crawford Counties, indicating production from these rocks declined 12 percent from a year ago. Production of natural gas liquids also decreased, down 24 percent from 58,000 bbl in 1980 to 44,000 bbl in 1981. Figure 1 illustrates these changes in oil production in Pennsylvania.

Figure 1. Oil production in Pennsylvania, 1981

	1981	*1980*	*% Change*	*Cumulative to 12/31/81*
	(1,000 barrels)			
Penn Grade	3,729	2,940	+27	1,304,424
Natural gas liquids	44	58	−24	

Figure 2 shows the amount of oil production and the total number of producing oil wells in Pennsylvania by county. Production statistics for oil in Pennsylvania's counties are based on the amount shipped or sold, rather than the actual amount produced from each well. The leading counties for oil production in 1981 were Warren, McKean, and Venango, accounting for 78 percent of the total oil produced in Pennsylvania.

DEVELOPED OIL RESERVES

At the end of 1981 the developed oil reserves of Pennsylvania totaled 50,946,000 bbl, an increase of 1 percent over the 1980 figure of 50,559,000 bbl. The counties having the greatest reserves of oil continued to be McKean, Venango, and Warren. New reserves were added in almost every county or district with the exception of Erie and Crawford Counties. Re-

Figure 2. Oil wells and crude oil produced in Pennsylvania in 1980 and 1981, by counties*

County	*Crude oil production (barrels)* 1981	1980	*Number of producing oil wells* 12/31/81	12/31/80
Allegheny	65,333	63,404	328	285
Armstrong	10,350	9,642	91	80
Beaver	4,617	4,151	68	65
Butler	66,683	69,969	1,070	1,116
Clarion	27,503	25,019	383	440
Clearfield	229	71	4	0
Crawford	60,847	69,207	143	94
Elk	241,632	13,885	155	182
Erie	3,478	3,681	54	34
Fayette	0	0	1	0
Forest	153,244	101,437	1,012	1,041
Greene	24,558	24,801	322	244
Indiana	3,074	1,305	51	18
Jefferson	5,305	5,088	24	21
Lawrence	103	98	3	2
McKean	971,519	881,904	10,352	11,216**
Mercer	8,471	3,529	96	43
Potter	15,138	16,094	81	80
Venango	827,891	586,446	5,664	6,050
Warren	1,012,905	671,395	4,776	4,384
Washington	97,930	98,983	588	552
Westmoreland	5,166	457	19	7
TOTAL	3,605,976	2,650,566	25,285	25,954**

*Compiled by the Pennsylvania Department of Commerce, Bureau of Statistics.
**Corrected figure.

serves of natural gas liquids decreased 21 percent from 208,000 bbl in 1980 to 164,000 bbl in 1981. Figure 3 summarizes oil and natural gas liquid reserve statistics.

Figure 3. Oil reserves in Pennsylvania, 1981

	1981	*1980*	*% Change*
	(1,000 barrels)		
Total oil	50,946	50,559	+ 1
Natural gas liquids	164	208	−21

SECONDARY AND TERTIARY OIL RECOVERY PROJECTS

A total of 131 service wells was reported in 1981, compared to 64 in 1980 and 84 in 1979. All of these service wells were waterflood, gas-injection, or tertiary recovery project wells. Elk and McKean Counties each accounted for 59 service wells, and Venango and Warren Counties had 7 and 6 wells, respectively. The 131 service wells reported in 1981 amount to a 105 percent increase in oil-related services over 1980. Figure 4 shows the changes in oil production in Pennsylvania since the drilling of Drake's well in 1859, as well as production from the Bradford field in McKean County. Bradford field production accounted for 26 percent of total state production in 1981, and the majority of this production was from waterflooded areas.

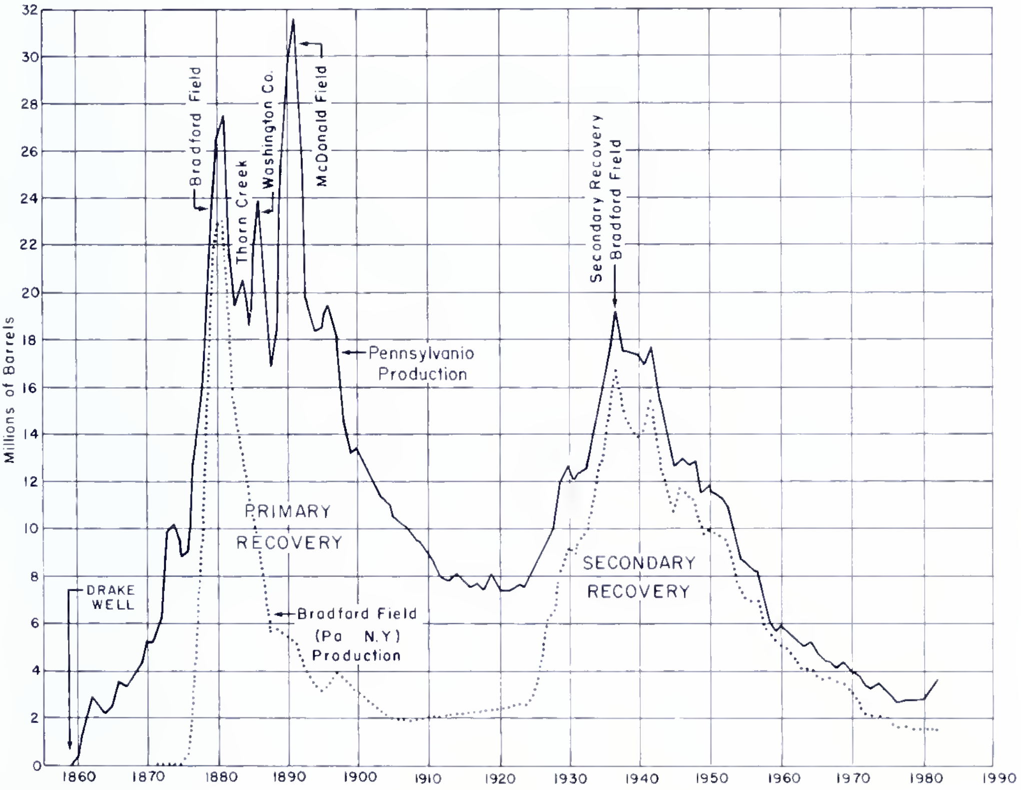

Figure 4. Annual production of crude oil in Pennsylvania

No new waterflood projects were reported in 1981, although several new projects were reported to be under consideration. One of these is the Hodgens Lease Project, a Pennzoil Company waterflood in the Washington-Taylorstown field in Washington County. The project supposedly got underway late in 1981, but flooding was not expected to begin until the early part of 1982. Waterflooding projects begun before 1981 and still reported to be in operation include the Pennzoil Company's Highland Warrant project in Elk County (Kane field), the Witco Chemical Corporation's Tally Ho project in McKean County (Guffey field), and the various projects in the Bradford field of McKean County.

The Penn Grade Micellar Displacement Project at Derrick City in the Bradford field, a joint effort of Pennzoil, Witco, Quaker State Oil Refining Corporation, and the U. S. Department of Energy, was shut in on December 31, 1980. The project has subsequently been plugged and abandoned, and a final report is to be published in 1982. Pennzoil has completed the drilling phase of a 220-acre Maraflood* project in the Bradford field near Cyclone, McKean County. Fluid injection is to begin in the spring of 1982. Another tertiary recovery project, on the Bingham 533 lease in the Bradford field, continues to be operated by injection of water. This particular project, another Pennzoil effort, is classified as a microemulsion-flood project.

GAS PRODUCTION

Gas production in Pennsylvania increased from 97,439 million cubic feet (Mmcf) in 1980 to 122,454 Mmcf in 1981, a 26 percent increase. The number of producing gas wells is estimated at 21,500, an 8 percent increase over the 1980 estimate of 20,000 producing wells. Figure 5 summarizes the gas production statistics for Pennsylvania in 1981.

Figure 5. Gas production in Pennsylvania, 1981

	1981	*1980*	*% Change*	*Cumulative to 12/31/81*
	(millions of cubic feet)			
Shallow gas[1]	101,173	82,570	+23	—
Deep gas[2]	21,281	14,869	+43	—
TOTAL GAS	122,454	97,439	+26	9,519,822

[1] Shallow gas: from Late Devonian or younger rocks; generally less than 4,000 feet deep.
[2] Deep gas: from Middle Devonian or older rocks; generally more than 4,000 feet deep.

GAS RESERVES

The total proven recoverable reserves of natural gas in Pennsylvania in 1981 was 2,481,168 Mmcf, a 7 percent increase over 1980. Stored recoverable gas also increased 7 percent, to 596,518 Mmcf. Figure 6 shows reserve figures for Pennsylvania in 1981, and Figure 7 shows production, consumption, and reserves of natural gas in Pennsylvania for the period 1946 to 1981.

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*Maraflood is a trade name of the Marathon Oil Company.

Figure 6. Gas reserves in Pennsylvania, 1981

	1981	*1980*	*% Change*
	(millions of cubic feet)		
Total gas	2,481,168*	2,316,119*	+7
Stored recoverable gas	596,518	556,615	+7

*Includes stored recoverable gas

GAS STORAGE AREAS

Natural gas storage in Pennsylvania began shortly after the end of the First World War (about 1920). Because of the development of severe natural gas shortages during the war, storage of gas in depleted reservoirs or highly permeable, nonproductive horizons became a way of offsetting peak demand periods. Since 1921 Pennsylvania has consumed more gas than it has produced, making it necessary to store large quantities in the summer months for use during the winter. Storage reservoirs occur in almost all of the major gas-producing formations in the Commonwealth, but are most common in the Upper Devonian Venango and Bradford Groups, and in the Lower Devonian Oriskany Sandstone. Figure 8 shows the locations and lists the names of all active gas storage areas in Pennsylvania in 1981. Only one change was made from 1980: the Mt. Royal Storage pool in the Glenshaw field, Allegheny County, was abandoned.

Natural gas storage capacity at the end of 1981 is unknown. Recoverable gas in storage was 596,518 Mmcf, compared with 556,615 Mmcf in 1980.

OIL AND GAS PRICES

In 1981, shortly after taking office, the President of the United States ordered the immediate decontrol of crude oil, gasoline, and propane produced in the country. The order took effect on January 28 and had an almost immediate effect of raising oil and oil product prices. This increase of prices was short-lived, however, and the prices paid for both crude oil and gasoline began to decline during the year. The price for Penn Grade crude oil was $38.00 per bbl on January 1, 1981, but fell to $36.00 on May 15, and eventually ended the year at $35.00 per bbl, a price established on June 17 (Figure 9).

Natural gas prices are subject to the Natural Gas Policy Act (NGPA) for the most part, although some gas is still being bought under old, pre-NGPA contracts. The actual well-head price paid by Pennsylvania utilities for Pennsylvania-produced natural gas ranged from a low of $0.24 per thousand cubic feet (Mcf) to a maximum of $5.10 paid under NGPA Section 107

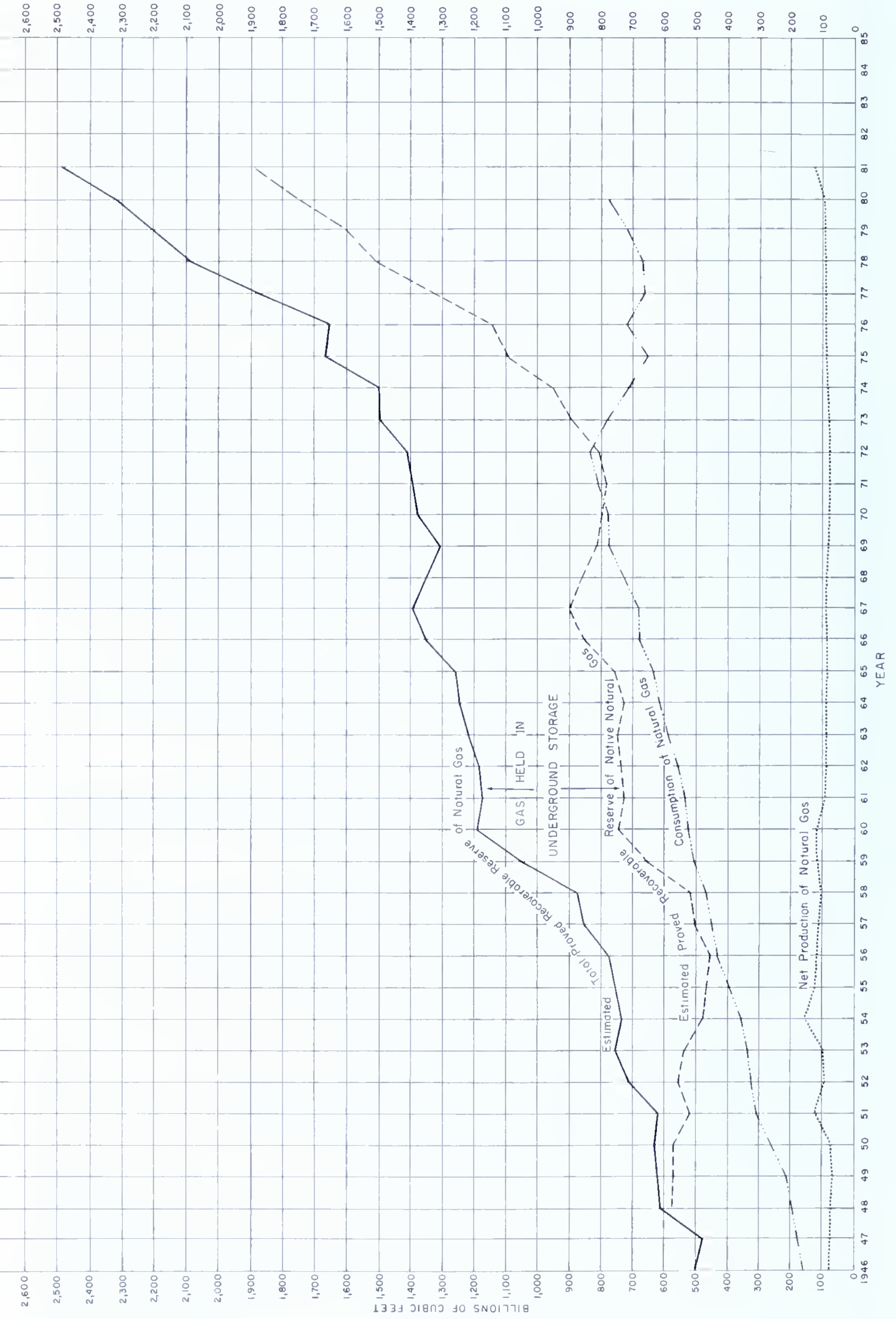

Figure 7. Production, consumption, and reserves of natural gas in Pennsylvania

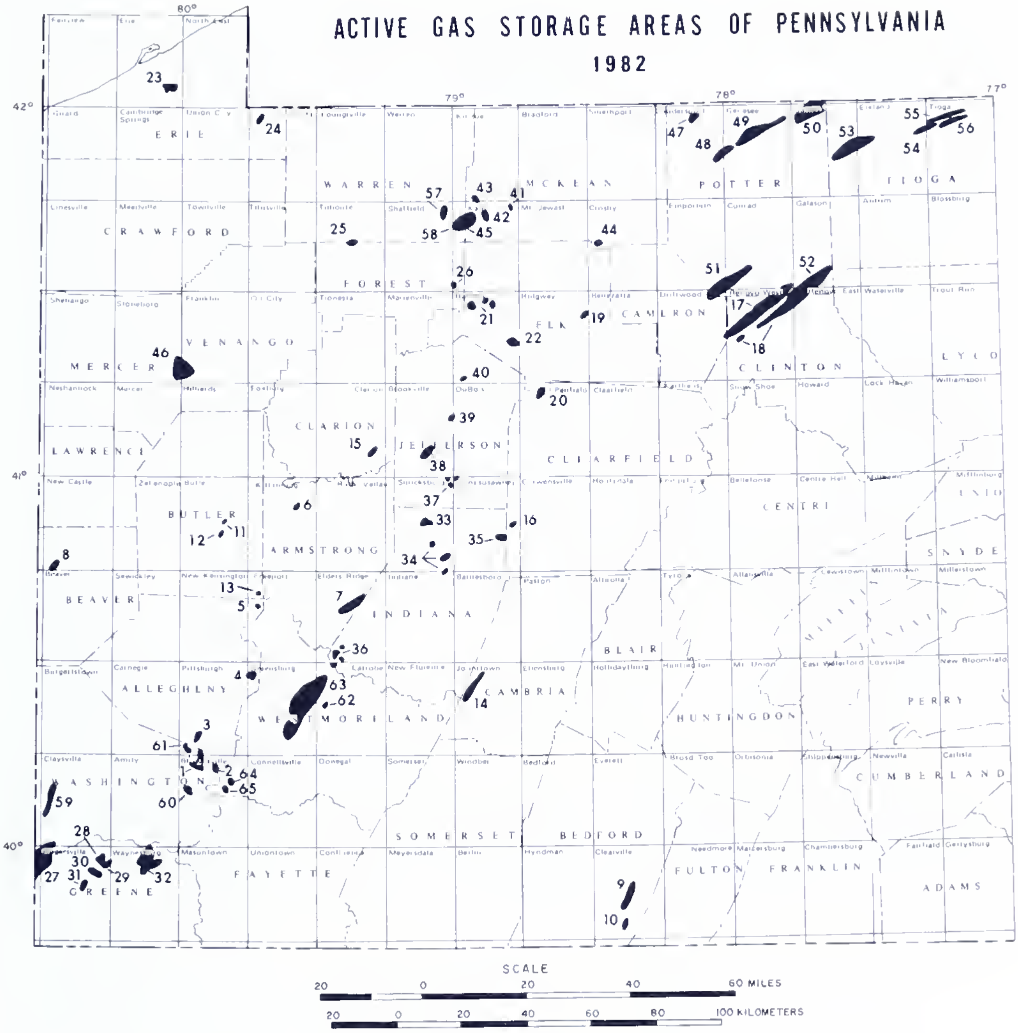

Figure 8. Active gas storage areas of Pennsylvania

NAMES OF ACTIVE GAS STORAGE AREAS IN PENNSYLVANIA

ALLEGHENY COUNTY

1. Bunola
2. Gamble Hayden
3. Tepe
4. Murrysville (Dice)
5. Smith Parke

ARMSTRONG COUNTY

6. Fair and Helm
7. South Bend

BEAVER COUNTY

8. Black Hawk

BEDFORD COUNTY

9. Artemas A
10. Artemas B

BUTLER COUNTY

11. Vardy
12. Partman
13. Hughes

CAMBRIA COUNTY

14. Rager Mountain

CLARION COUNTY

15. Truittsburg

CLEARFIELD COUNTY

16. Gaurley-Miller

CLINTON COUNTY

17. Leidy
18. Tamarack

ELK COUNTY

19. St. Marys
20. Boone Mountain
21. Owls Nest
22. Belmouth

NAMES OF ACTIVE GAS STORAGE AREAS IN PENNSYLVANIA *(Continued)*

ERIE COUNTY

23. Summit
24. Corry

FOREST COUNTY

25. Queen
26. Duhring

GREENE COUNTY

27. Majorsville-Heard
28. Swarts West
29. Swarts
30. Hunters Cave
31. Holbrook
32. Pratt

INDIANA COUNTY

33. Alabran
34. Kinter
35. Clark
36. Schmidt

JEFFERSON COUNTY

37. Sprankle
38. Galbraith
39. Markle
40. Munderf

McKEAN COUNTY

41. Meade Run
42. Keelor
43. Swede Hill
44. Wellendorf
45. East Branch "B"

MERCER COUNTY

46. Henderson

POTTER COUNTY

47. Sharon
48. Hebron
49. Ellisburg
50. Harrison
51. Wharton
52. Greenlick

TIOGA COUNTY

53. Sabinsville
54. Palmer
55. Tioga
56. Meeker

WARREN COUNTY

57. Deerlick
58. East Branch "A"

WASHINGTON COUNTY

59. Donegal
60. Calvin
61. Finleyville

WESTMORELAND COUNTY

62. Seanor
63. Oakford
64. Webster
65. Patton

(High-Cost Gas, in this case the price paid for gas from the recently designated Medina tight formation). Figure 10 shows NGPA price ceilings during 1981. Total decontrol of natural gas prices was considered by the President, but no action was taken in 1981.

Figure 9. Oil prices in Pennsylvania, 1981

Month	*Price per barrel*
January 1, 1981	$38.00
May 15, 1981	$36.00
June 17, 1981	$35.00

DRILLING AND COMPLETION COSTS

The costs of drilling and completing a well, given below in dollars per foot, vary with the company, drilling depth, method of completion, and geographic area. Costs generally increase yearly due to inflation, but they also increase with depth, and there is a substantial increase for wells that penetrate deeper, unexplored formations. Dry holes are generally less expensive than producing wells because less is done to the hole (primarily drilling and logging). Extremely deep wells may be extraordinarily ex-

Figure 10. 1981 Gas price ceilings under federal Natural Gas Policy Act

			Maximum lawful price for deliveries made in:											
Subpart of part 271	NGPA Section	Category of gas	Jan. 1981	Feb. 1981	Mar. 1981	Apr. 1981	May 1981	June 1981	July 1981	Aug. 1981	Sept. 1981	Oct. 1981	Nov. 1981	Dec. 1981
			cost per million British Thermal Units											
B	102	New Natural Gas, Certain OCS Gas	$2.667	$2.698	$2.729	$2.761	$2.787	$2.813	$2.840	$2.863	$2.886	$2.909	$2.940	$2.971
C	103	New Onshore Production Wells	$2.363	$2.384	$2.406	$2.428	$2.444	$2.460	$2.476	$2.488	$2.501	$2.514	$2.533	$2.552
F	106 (b) (1) (B)	Alternative Maximum Lawful Price for Certain Intrastate Rollover Gas	$1.349	$1.361	$1.373	$1.385	$1.394	$1.403	$1.412	$1.419	$1.426	$1.433	$1.444	$1.455
G	107 (c) (5)	Gas Produced from Tight Formations	$4.726	$4.768	$4.812	$4.856	$4.888	$4.920	$4.952	$4.976	$5.002	$5.028	$5.066	$5.104
H	108	Stripper Gas	$2.855	$2.888	$2.922	$2.956	$2.984	$3.012	$3.041	$3.066	$3.091	$3.116	$3.149	$3.183
I	109	Not Otherwise Covered	$1.957	$1.975	$1.993	$2.011	$2.024	$2.037	$2.050	$2.060	$2.070	$2.080	$2.096	$2.112

pensive because of increased rig time and because provision must be made for unforeseen problems. In Pennsylvania, where the average well is drilled to the Upper Devonian Bradford Group at 2,541 feet (the average total depth for all wells drilled in Pennsylvania in 1981), a well drilled below 5,000 feet is considered moderately deep, and anything below 10,000 feet is considered ultra deep.

Because drilling conditions and company policies vary widely, even within a single geographic area, only estimates of drilling costs are given below.

1. Venango County, shallow oil well in Venango Group, about 800 feet deep. Dry hole,* about $13 per foot. Completion, about $38 per foot.
2. McKean County, shallow oil well in Bradford Group, about 2,000 feet deep. Dry hole,* about $12 per foot. Completion, about $35 per foot.
3. Indiana County, shallow gas well in Bradford Group, about 3,500 feet deep. Dry hole,* about $24 per foot. Completion, about $50 per foot.
4. Indiana-Westmoreland Counties, deep gas well in Oriskany Sandstone, about 8,000 feet deep. Dry hole,* about $33 per foot. Completion, about $42 per foot.
5. Somerset County, deep gas well in Oriskany Sandstone, about 9,000 feet deep. Dry hole,* about $50 per foot. Completion, about $68 per foot.
6. Crawford County, deep gas well in Medina Group, about 5,000 feet deep. Dry hole,* about $36 per foot. Completion, about $50 per foot.

*No completion attempted.

1981 DRILLING AND COMPLETIONS

TOTAL COMPLETIONS

In 1981 Pennsylvania oil and gas well drillers reported 3,554 well completions, including 20 old wells drilled deeper. This constitutes a 76 percent increase in drilling (1,534 wells) over 1980. As in previous years, the number of wells reported was probably half the number actually drilled (an estimated 7,000 to 8,000 wells).

The total footage drilled in all reported wells in 1981 amounted to 9,007,314 feet, an increase of 65 percent over 1980. The average total depth per well was 2,541 feet, a decrease which can be explained by the increase in reported shallow oil wells in Venango, Warren, and McKean Counties. The six most active counties for drilling during 1981 were, in order of importance, Venango, Indiana, Warren, Crawford, Erie, and McKean. These six counties accounted for 74 percent of all wells reported (Figure 11).

OIL COMPLETIONS

The oil and gas industry reported 1,641 oil wells completed in Pennsylvania in 1981, including one old well drilled deeper. This is a 111 percent in-

Figure 11. New well completions and old wells drilled deeper in Pennsylvania, 1981

NEW WELL COMPLETIONS

County	*No. of wells*	*Average total depth (feet)*
Allegheny	4	3,225
Armstrong	54	3,493
Beaver	4	1,917
Butler	27	1,980
Cambria	17	4,094
Cameron	2	4,315
Clarion	40	2,169
Clearfield	113	3,566
Crawford	305	4,220
Elk	128	2,483
Erie	284	3,903
Fayette	20	4,208
Forest	145	1,068
Greene	15	2,857
Indiana	533	3,742
Jefferson	124	3,347
McKean	266	1,974
Mercer	34	5,141
Potter	6	1,523
Somerset	10	9,076
Tioga	2	3,816
Venango	761	848
Warren	479	1,443
Washington	31	2,612
Westmoreland	130	4,009
TOTAL	3,534	2,541

OLD WELLS DRILLED DEEPER

County	*No. of wells*	*Average total depth (feet)*
Armstrong	2	985
Beaver	1	28
Clarion	2	983
Clinton	1	11,589
Crawford	1	1,357
Indiana	4	583
Jefferson	6	459
Westmoreland	3	1,313
TOTAL	20	1,297

crease over the 777 wells reported in 1980. The total footage drilled in all oil wells was 1,923,641 feet, and the average total depth was 1,173 feet. The total footage constitutes a 106 percent increase (989,789 feet) over 1980. The most active counties for oil well drilling were Venango, Warren, and McKean, in order of importance. Drilling in these three counties accounted for 85 percent of all oil wells drilled in the Commonwealth during the year (Figure 12).

Figure 12. New oil well completions and old wells drilled deeper in Pennsylvania, 1981

NEW OIL WELL COMPLETIONS

County	*No. of wells*	*Average initial production (bopd)**	*Average total depth (feet)*
Allegheny	1	4	1,792
Beaver	2	1	1,601
Butler	14	3	1,820
Clarion	9	9	1,173
Crawford	14	2	844
Elk	65	3	2,474
Erie	1	not given	3,890
Forest	136	11	1,013
McKean	201	2	1,952
Mercer	1	not given	565
Potter	3	2	1,457
Venango	747	9	846
Warren	439	23	1,187
Washington	7	not given	2,629
TOTAL	1,640	12	1,173

OLD OIL WELL DRILLED DEEPER

County	*No. of wells*	*Average initial production (bopd)**	*Average amount deepened (feet)*
Beaver	1	1	28

*bopd = barrels of oil per day

GAS COMPLETIONS

The total number of gas wells drilled in Pennsylvania in 1981 was 1,677, including 17 old wells drilled deeper. This represents a 52 percent increase over the 1980 total of 1,100. The total footage drilled for all new gas wells was 6,507,852 feet, amounting to a 59 percent increase over the previous year's total. The average depth for all gas wells was 3,881 feet. The most active counties for gas well drilling, in order of importance, were Indiana, Crawford, Erie, Westmoreland, Jefferson, and Clearfield, accounting for

86 percent of all gas wells drilled in the Commonwealth. Figure 13 summarizes the preceding data.

Figure 13. New gas well completions and old wells drilled deeper in Pennsylvania, 1981

NEW GAS WELL COMPLETIONS

County	*No. of wells*	*Average initial open flow (Mcfgpd)**	*Average total depth (feet)*
Allegheny	1	280	7,512
Armstrong	54	377	3,493
Butler	4	46	2,627
Cambria	17	1,264	4,094
Cameron	1	335	7,167
Clarion	28	118	2,378
Clearfield	109	2,579	3,555
Crawford	279	1,259	4,528
Elk	2	232	3,025
Erie	271	1,348	3,916
Fayette	17	451	4,220
Forest	5	372	1,717
Greene	12	486	2,933
Indiana	526	1,150	3,749
Jefferson	118	503	3,365
McKean	2	3	2,600
Mercer	33	1,904	5,280
Potter	2	13	1,615
Somerset	8	1,242	9,005
Venango	3	28	1,300
Warren	32	2,020	4,844
Washington	15	791	2,931
Westmoreland	121	582	4,001
TOTAL	1,660	1,171	3,912

OLD GAS WELLS DRILLED DEEPER

County	*No. of wells*	*Average initial open flow (Mcfgpd)**	*Average amount deepened (feet)*
Armstrong	2	225	985
Clarion	1	30	1,000
Crawford	1	488	1,357
Indiana	4	824	583
Jefferson	6	117	459
Westmoreland	3	333	1,313
TOTAL	17	351	785

*Mcfgpd = thousand cubic feet of gas per day

COMBINATION OIL AND GAS WELL COMPLETIONS
(Not Reported Separately as Oil or Gas)

For the purpose of keeping statistics on drilling and production, the Bureau of Topographic and Geologic Survey classifies as a combination oil and gas well any well that is primarily an oil well (i.e., produces any amount of oil), but that also produces at least 100 Mcf of gas per day. Most oil wells drilled in the Commonwealth produce a little gas, and many produce enough gas to be sold to utility or pipeline companies. However, because of the 100 Mcf cutoff, these wells are considered to be simply oil wells. There were 16 combination oil and gas wells reported drilled in Pennsylvania in 1981, a decrease of 33 percent (8 wells) over the previous year. The total footage for these wells was 55,513 feet, a decrease of 19 percent from 1980. The average depth for the 16 combination wells was 3,470 feet. Fifty percent of these wells were drilled in Erie County (Figure 14).

Figure 14. New combination oil and gas well completions in Pennsylvania, 1981

County	*No. of wells*	*Average initial production (bopd)**	*Average initial open flow (Mcfgpd)***	*Average total depth (feet)*
Butler	1	10	65	2,272
Clarion	3	4	93	3,202
Crawford	1	not given	200	3,811
Erie	8	not given	1,391	3,985
Jefferson	1	not given	295	3,681
McKean	2	not given	140	2,133
TOTAL	16	—	766	3,470

*bopd = barrels of oil per day
**Mcfgpd = thousand cubic feet of gas per day

DRY COMPLETIONS

Eighty-nine dry holes were drilled in Pennsylvania in 1981, including 2 wells drilled deeper and completed as dry. This represents a 62 percent increase over 1980. This does not mean, however, that the success rate in drilling declined during the year. The success rate for all wells drilled in the Commonwealth remained at 97 percent. The total footage drilled for all Pennsylvania dry holes in 1981 was 243,663 feet, a 5 percent increase (10,863 feet) over 1980 (Figure 15).

Figure 15. New dry hole completions and old wells drilled deeper but completed dry in Pennsylvania, 1981

NEW DRY HOLE COMPLETIONS

County	*No. of dry holes*	*Average total depth (feet)*
Allegheny	2	1,799
Beaver	2	2,234
Butler	8	1,899
Cameron	1	1,462
Clearfield	4	3,869
Crawford	11	721
Elk	2	2,457
Erie	4	2,851
Fayette	3	4,137
Forest	4	2,126
Greene	3	2,544
Indiana	7	3,185
Jefferson	5	2,836
McKean	2	3,796
Potter	1	1,536
Somerset	2	9,358
Tioga	2	3,816
Venango	4	961
Warren	2	3,328
Washington	9	2,068
Westmoreland	9	4,114
TOTAL	87	2,656

OLD WELLS DRILLED DEEPER, COMPLETED DRY

County	*No. of wells*	*Average amt. deepened (feet)*
Clarion	1	965
Clinton	1	11,589
TOTAL	2	6,277

MISCELLANEOUS COMPLETIONS

The category "Miscellaneous Completions" comprises wells of several different types: stratigraphic or core tests, drilled to collect subsurface information such as formation thickness or the effects of well completion on various rock types; water-input wells for secondary and tertiary recovery of oil; gas-injection wells, including air-injection wells, used to stimulate oil production; water-supply wells for waterflood projects; liquid-waste disposal wells; and gas-storage observation wells. Fluctuations within this category normally do not indicate the nature of general drilling activity.

During 1981, 131 miscellaneous (service) wells were drilled in Pennsylvania. This is a 105 percent increase (67 wells) over 1980. All of the service wells reported during the year were for secondary or tertiary oil recovery projects. The total footage drilled in these wells was 276,645 feet, a 111 percent increase when compared with the 1980 figure. The average depth for all service wells was 2,112 feet. Ninety percent of the total (118 wells) were drilled in Elk and McKean Counties, each county having the same number (59) of wells (Figure 16).

Figure 16. Service well completions in Pennsylvania, 1981

County	*No. of wells*	*Average total depth (feet)*
Elk	59	2,476
McKean	59	1,962
Venango	7	889
Warren	6	1,429
TOTAL	131	2,112

DRILLING AND PRODUCTION ACTIVITY

(Classified as Shallow or Deep)

The Pennsylvania Geological Survey, Oil and Gas Geology Division, classifies wells drilled in the Commonwealth as follows: wells that do not penetrate the Upper-Middle Devonian boundary, the top of the Tully Limestone or its equivalent, are considered to be shallow, regardless of depth; wells that do penetrate the Tully Limestone or its equivalent are considered to be deep, regardless of depth. Because of the geometry of the Appalachian basin and the wedge-shaped character of the sediment package deposited in it, absolute drilling depth is not instrumental in this classification. As a result, a 2,500-foot deep well in the Medina Group (Lower Silurian) in Erie County is deep, but a 5,700-foot test of the Elk Group (Upper Devonian) in Greene County is shallow. Shallow wells, which account for the largest number of wells drilled in Pennsylvania, generally produce oil and/or gas. Deep wells more often than not produce only gas, the exceptions being certain Medina Group wells in Erie and Crawford Counties, and some rare "reef" wells in the Middle Devonian Onondaga Group limestones. Figure 17 shows the shallow well activity in Pennsylvania over the last 31 years, and Figure 18 illustrates the deep well activity for the period 1930-1981. Fig-

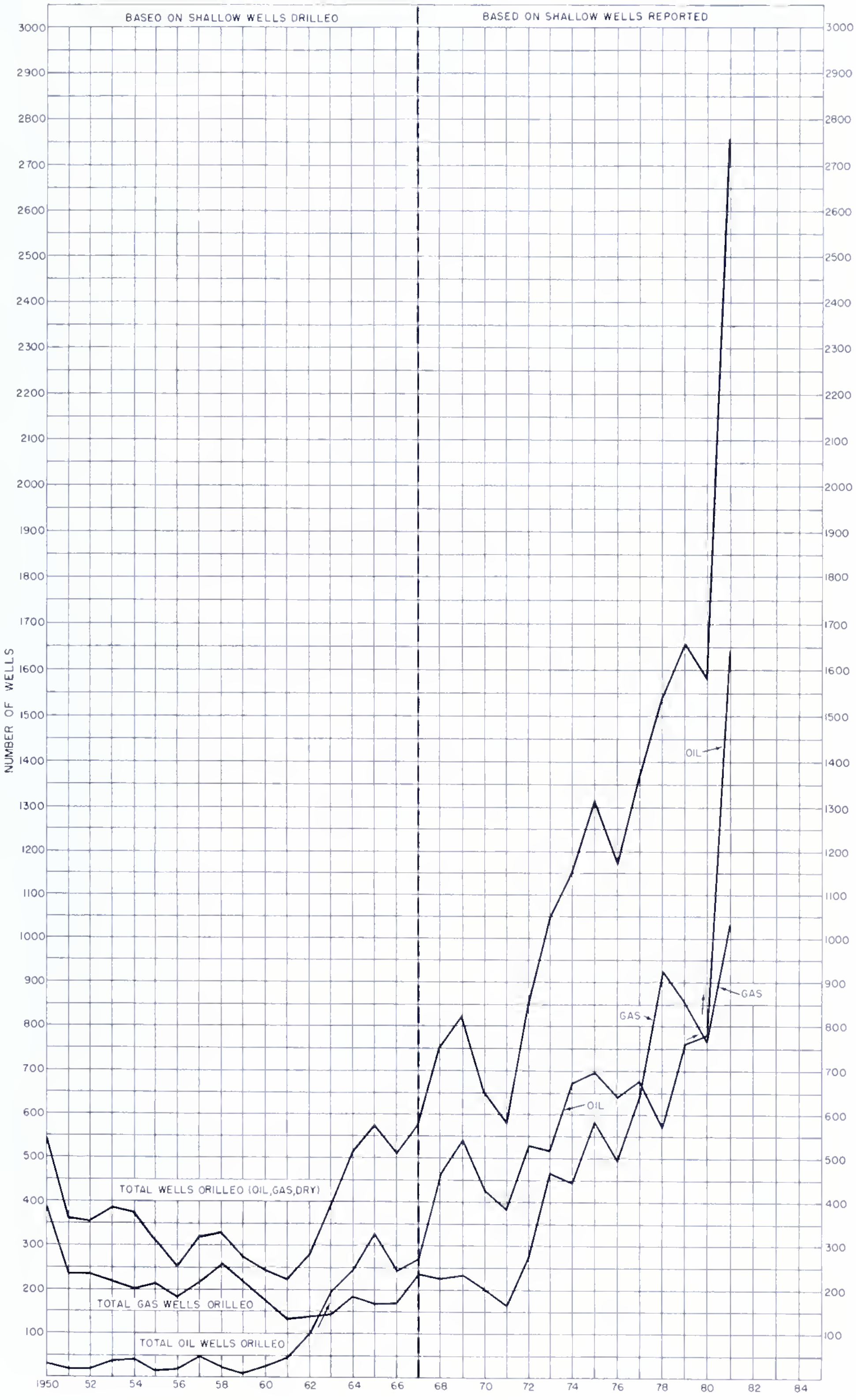

Figure 17. Shallow well activity, 1950-1981 (Late Devonian or younger producing horizons; generally less than 4,000 feet)

ure 19 gives the statistical breakdown for deep and shallow wells in Pennsylvania in 1981.

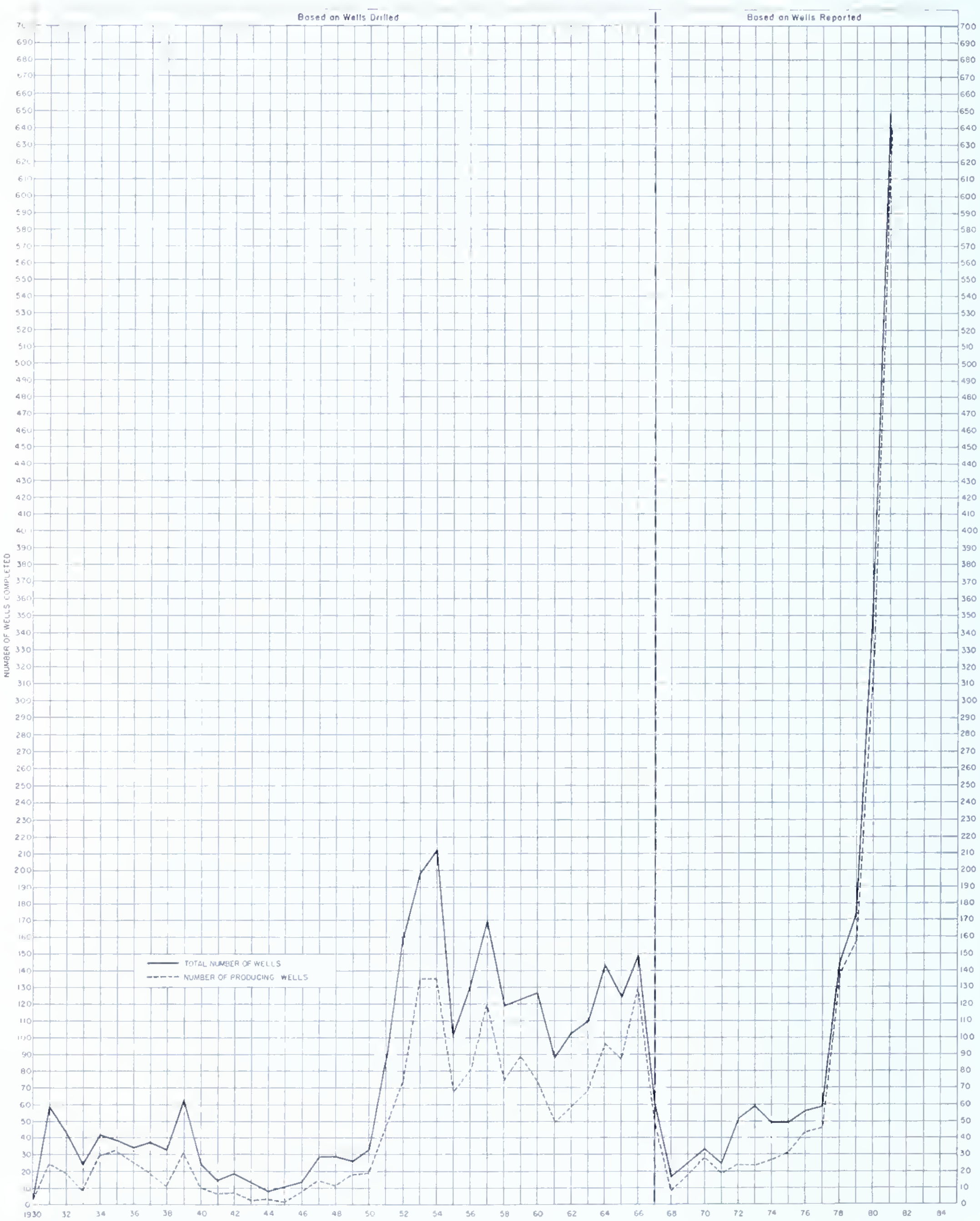

Figure 18. Annual rate of deep sand exploration and development, 1930-1981 (Middle Devonian or older producing horizons; generally more than 4,000 feet)

Figure 19. Drilling and completion of wells reported, 1981
(according to geologic age and depth of producing horizons)

Shallow—Upper Devonian and younger	
NEW WELLS	
Gas	1,031
Oil	1,639
Oil and gas	7
Dry	78
Total	*2,755*
DEEPENED WELLS	
Gas	16
Oil	1
Dry	1
Total	*18*
MISCELLANEOUS WELLS	
Service	*131*
Deep—Middle Devonian and older	
NEW WELLS	
Gas	629
Oil	1
Oil and gas	9
Dry	9
Total	*648*
DEEPENED WELLS	
Gas	1
Dry	1
Total	*2*
TOTAL ALL WELLS DRILLED	*3,554*

The number of shallow wells reported in Pennsylvania in 1981 increased dramatically over the previous year, exceeding the total number of all wells reported in 1980. The reported total of 2,904 shallow wells represents a 74 percent increase in shallow well activity. In general these wells were completed in the Upper Devonian Venango and Bradford Group sandstones throughout western Pennsylvania. However, there were some wells completed in shallower horizons such as the Mississippian Burgoon Formation (the Big Injun sand of drillers). Shallow oil and/or gas well drilling in Venango, Indiana, Warren, McKean, Forest, Jefferson, Elk, and Clearfield Counties accounted for 87 percent of all shallow drilling reported in 1981.

Deep drilling continued to increase as in previous years. In 1981, 650 deep wells were reported in Pennsylvania for an increase of 84 percent over 1980.

The majority of these wells, 561 wells reported from Erie and Crawford Counties, were drilled to the Lower Silurian Medina Group sandstones. These two counties accounted for 86 percent of all deep well drilling in the Commonwealth, and for 96 percent of all Medina wells.

Totals of 21,281,464 Mcf of gas and 64,327 bbl of oil were produced from deep reservoirs in 1981. A summary by field and pool of deep gas production in 1981 is given in Figure 20. Figure 21 illustrates the amount of gas produced from the various deep horizons, both as annual totals and as cumulative totals.

The drilling depth record remains at 21,460 feet, set by the Amoco #1 Svetz in Somerset County in 1975. This is the deepest well drilled in the Appalachian basin to date. The deepest producing interval in Pennsylvania stands at 11,458 feet from the Tuscarora Sandstone (Lower Silurian) in the Heyn pool, Summit field, in Fayette County.

OIL AND GAS EXPLORATORY AND DEVELOPMENT HIGHLIGHTS

The Pennsylvania Geological Survey, Oil and Gas Geology Division, uses a classification scheme for exploratory and development drilling which is modified from the definitions used by the Committee on Statistics and Drilling of the American Petroleum Institute/American Association of Petroleum Geologists. All wells reported here are the same as those reported under drilling and completions in the previous section of this report.

EXPLORATORY WELLS

An exploratory well is one that is drilled to: (1) find and produce oil or gas in unproven areas; (2) find a new reservoir in an area previously known to have oil or gas production in another reservoir; or (3) extend the known limit of a productive oil or gas reservoir. Exploratory wells are classified as new field wildcats, new pool wildcats, deeper pool tests, shallower pool tests, and outpost/extension tests. A dry exploratory hole is a well in an unproven area or pay zone that is not completed for production. Exploratory drilling in 1981 increased 207 percent (273 wells) over 1980, and the success rate for these wells was 94 percent (see Figure 22 for locations of selected exploratory wells drilled in Pennsylvania in 1981).

DEVELOPMENT WELLS

A development well is one that is drilled within a proven area of production to a known productive stratigraphic horizon. A producing well in such an area and reservoir is classified as an oil or gas development well. If the well is not completed for production, it is a dry development well. Develop-

Figure 20. Gas production from rocks of Middle Devonian or older age in Pennsylvania, 1981 (classified as "deep" production)

County	*Field*	*Pool*	*Discovery date*	*Cumulative production at end of 1980 (in Mcf*)*	*Production 1981 (in Mcf*)*	*Cumulative production at end of 1981 (in Mcf*)*	*Status of field or pool at end of 1980*
Allegheny.	Forward	Monongahela	3/25/79	0	0	0	Shut-in
Armstrong	Goheenville	Snyderville	10/23/70	279,233	4,422	7,009,547	Producing
	Roaring Run	Roaring Run Oriskany	12/14/70	7,005,125	185,522	7,190,647	Producing and abandoned
Bedford and Blair.	Pavia		1/20/61	0	11,600	11,600	Producing
Cambria.	Carrolltown	Burley	1/13/69	341,156	2,206	343,362	Producing
		Pindleton	6/30/69	4,893,514	90,189	4,983,703	Producing
	Pot Ridge		7/ 1/81	0	0	0	Shut-in
Cameron	East Emporium		11/18/71	3,981,636	283,938	4,614,165	Producing
Cameron and Elk	Hicks Run		6/ 7/56	4,330,227	11,930	4,342,157	Producing and abandoned
	Whippoorwill		7/10/61	15,890,510	83,676	15,974,186	Producing
Cameron, Clearfield, Elk, Indiana, and Jefferson	Punxsutawney-Driftwood	*Total*	*9/15/51*	*380,524,569*	*929,062*	*381,453,631*	*Producing and shut-in*
		Benezette	1/ 5/53	250,087,413	258,405	250,507,980	Producing and abandoned
		Driftwood	9/15/51		162,162		
		Grove Hill	2/18/81	0	598	598	Producing
		Helvetia	5/11/60	130,437,156	64,240	130,945,053	Producing
		Rockton	2/25/55		409,573		Producing
	Big Run	Reed-Deemer	12/ 1/53		34,084		Producing and shut-in
Centre	Devils Elbow		12/18/77	52,050	114,726	166,776	Producing
	Runville		2/28/80	0	0	0	Shut-in
Clarion.	Clarion-Miola	Weaver	2/22/80	0	0	0	Shut-in
Clearfield	Boone Mt.	Moshannon	9/15/76	36,394	5,949	42,343	Producing
	Irish Run	Anderson Creek	9/25/75	67,402	14	67,416	Producing
	West Decatur		3/30/73	3,629,737	55,903	3,685,640	Producing and shut-in

Figure 20. (Continued)

County	*Field*	*Pool*	*Discovery date*	*Cumulative production at end of 1980 (in Mcf*)*	*Production 1981 (in Mcf*)*	*Cumulative production at end of 1981 (in Mcf*)*	*Status of field or pool at end of 1980*
Clearfield, Elk, and Jefferson	Penfield	DuBois	1/ 6/60	105,790,117	183,440	105,973,557	Producing
		Sabula	8/26/63	1,072,966	81,621	1,154,587	Producing
Clinton and Potter	Leidy	*Total*	*1/ 8/50*	*160,346,285*	*19,816*	*160,366,101*	*Gas storage, producing and shut-in*
		Ole Bull	1/ 9/59	5,546,253	19,816	5,566,069	
Crawford	Athens	*Total*	*9/20/74*	*486,103*	*1,421,063*	*1,907,166*	*Producing and shut-in*
		Brimstone	1/30/79	327,388	816,219	1,143,607	Producing and shut-in
		Dutch Hill	8/31/80	0	16,950	16,950	Producing
		Lincolnville	8/16/80	0	3,191	3,191	Producing
		Potash Run	3/18/79	20,363	114,920	135,283	Producing
		Rome	6/ 9/79	0	0	0	Shut-in
	Atlantic	Adamsville	8/ 5/81	0	0	0	Shut-in
	Cambridge Springs		1/31/76	168,052	47,441	215,493	Producing and shut-in
	Church Run	Hatchtown	6/27/79	0	0	0	Shut-in
		Vrooman	12/ 7/79	0	0	0	Shut-in
	Cussewago		6/17/81	0	0	0	Shut-in
	Frenchtown	*Total*	*8/17/80*	*0*	*0*	*0*	*Shut-in*
		Guys Mills	8/26/80	0	0	0	Shut-in
		Mt. Hope	10/31/80	0	0	0	Shut-in
	Geneva	Greenwood	10/31/73	0	99,490	99,490	Producing and shut-in
		Rock Creek	6/27/77	0	165,700	165,700	Producing
	Meadville	Tamarack Lake	12/12/80	0	0	0	Shut-in
	Papenfuse		11/16/80	0	0	0	Shut-in

	Rockdale		11/30/79	0	103,390	103,390	Producing and shut-in
	Richmond Township	Woodcock	7/21/81	0	0	0	Shut-in
		Zirkle	6/22/81	0	0	0	Shut-in
	South Shenango		8/ 9/79	0	0	0	Shut-in
	Sparta	Eastman Hill	10/30/75	0	0	0	Shut-in
Crawford and Erie	Conneaut	*Total*	*2/11/57*	*41,524,932*	*1,912,866*	*43,437,798*	*Producing and abandoned*
		Blood	12/17/80	0	0	0	Shut-in
		Bushnell-Lexington	12/31/58	17,403,857	314,210	17,718,067	Producing and abandoned
		Carlson	2/23/81	0	0	0	Shut-in
		Center Bar	11/19/78	0	4,074	4,074	Producing
		Cransville	6/17/81	0	0	0	Shut-in
		Forro	1/ 4/58	22,087	6,197	28,284	Producing
		Indian Springs	9/11/57	15,454,977	336,901	15,791,878	Producing
		Kastle	7/14/62	1,026,381	283,138	1,309,519	Producing and shut-in
		Lundys Lane	11/ 9/61	3,047,747	822,966	3,870,713	Producing and abandoned
		Pageville	10/10/80	0	0	0	Shut-in
		Pennside	2/ 8/81	0	0	0	Shut-in
		Pierce	12/31/58	895,482	14,258	909,740	Producing
		Springboro	11/ 7/79	44,693	100,326	145,019	Producing
		Stone Run	10/21/79	20,654	29,616	50,270	Producing
		West Mead	7/ 8/74	13,570	1,180	14,750	Producing
Crawford and Mercer. .	Cochranton	*Total*	*11/16/80*	*0*	*183,504*	*183,504*	*Producing and shut-in*
		Deckard	11/ 4/80	0	0	0	Shut-in
		McDaniels	3/16/81	0	134,064	134,064	Producing and shut-in
	Kantz Corners	*Total*	*7/26/77*	*0*	*2,917,740*	*2,917,740*	*Producing and shut-in*
		Barco	12/13/80	0	0	0	Shut-in

Figure 20. *(Continued)*

County	*Field*	*Pool*	*Discovery date*	*Cumulative production at end of 1980 (in Mcf*)*	*Production 1981 (in Mcf*)*	*Cumulative production at end of 1981 (in Mcf*)*	*Status of field or pool at end of 1980*
Crawford and Mercer. .	Cochranton	East Fairfield	7/31/80	0	29,923	29,923	Producing and shut-in
		Mt. Pleasant Road	8/30/80	0	15,772	15,772	Producing and shut-in
		Round Knob	11/12/80	0	18,846	18,846	Producing
		Shaws Corners	7/15/80	0	143,485	143,485	Producing and shut-in
Elk.	Horton	Boot Jack	9/20/73	11,275	0	11,275	Shut-in
Erie	Carter Hill		5/14/79	0	29,914	29,914	Producing
	Columbus	Hare Creek	6/26/81	0	0	0	Shut-in
	Concord	Harbor Ridge	10/ 2/79	0	0	0	Shut-in
		Stewart Road	3/10/80	0	0	0	Shut-in
	Corry	*Total*	*4/29/47*	*1,076,098*	*82,325*	*1,158,423*	*Producing, shut-in and gas storage*
		Beaver Dam	5/20/53	221,979	12,077	234,056	Producing and shut-in
		Spencer Creek	6/19/70	419	1,472	1,891	Producing and shut-in
		Tarbell	9/12/80	0	10,560	10,560	Producing
	Drumlin	Swails	6/27/80	0	28,618	28,618	Producing
	Edinboro		7/28/80	0	166,313	166,313	Producing
	Edinboro North		1/ 9/80	0	602,323	602,323	Producing and shut-in
	Erie	Bartosik	3/ 7/79	26,363	4,882	31,245	Producing
		Brandy Run	5/28/79	118	0	118	Shut-in
		Charter Oaks	5/19/77	77,645	23,017	100,662	Producing and shut-in

	Dunn Valley	1/19/80	5,422	5,345	10,767	Producing
	Fairplain	6/ 5/79	677	0	677	Shut-in
	Fairview	3/12/76	4,016	486	4,502	Producing and shut-in
	Glenwood	8/ 9/77	45,334	17,264	62,598	Producing
	Goddard	8/31/78	40,694	46,536	87,230	Producing
	Heidler	5/22/79	0	0	0	Shut-in
	Lawrence Park	8/30/77	3,241	2,248	5,489	Producing
	McKean	1/19/73	0	0	0	Shut-in
	Talcott	7/ 8/79	7,833	31,610	39,443	Producing
Franklin Center		6/16/80	0	60,023	60,023	Producing and shut-in
LeBoeuf	Waterford	3/21/77	828,321	814,077	1,642,398	Producing and shut-in
Mill Village		7/27/79	27,500	609,025	636,525	Producing
New Ireland	*Total*	*5/14/78*	*84,338*	*310,165*	*394,503*	*Producing and shut-in*
	Pattison	11/ 9/79	6,093	42,545	48,638	Producing and shut-in
North East	Bailey Brook	1/11/80	7,163	13,917	21,080	Producing
	Bull Reservoir	9/17/60	53,394	181,050	234,444	Producing
	Burgess	10/17/60	1,240,659	700,977	1,941,636	Producing
	Delhill Corners	6/23/79	467	0	467	Shut-in
	Half Moon	9/ 6/79	0	0	0	Shut-in
	Harborcreek	10/20/77	530,579	224,624	755,203	Producing
	Hornby	6/10/78	137,606	408,844	546,450	Producing
	Kuhl	8/14/78	15,086	5,404	20,490	Producing
	Little Hope	12/ 7/78	9,626	7,700	17,326	Producing and shut-in
	McGuire	2/ 8/80	0	0	0	Shut-in
	Orchard Beach	2/18/74	1,537,975	544,930	2,082,905	Producing and shut-in
	Wattsburg	4/19/80	22	5	27	Producing
Phillipsville	Dennee	7/14/81	0	1,658	1,658	Producing
Reeds Corners		7/ 9/80	0	169,209	169,209	Producing and shut-in

Figure 20. (Continued)

County	*Field*	*Pool*	*Discovery date*	*Cumulative production at end of 1980 (in Mcf*)*	*Production 1981 (in Mcf*)*	*Cumulative production at end of 1981 (in Mcf*)*	*Status of field or pool at end of 1980*
Erie and Warren.	Brokenstraw	*Total*	*7/27/78*	*14,829*	*14,691*	*29,520*	*Producing*
		Stroup	7/28/80	0	3,754	3,754	Producing
	Union City	Bentley Run	10/13/80	0	6,000	6,000	Producing
		Emmons	12/30/80	0	0	0	Shut-in
Fayette.	Feik		8/ 8/63	13,624	1,139	14,763	Producing
	Mill Run		8/17/78	0	0	0	Shut-in
		DuPree	8/23/80	0	0	0	Shut-in
	Sandy Creek	Quebec Run	6/ 3/69	20,478	3,031	23,509	Producing
	Spruell		10/13/61	7,168,099	351,126	7,519,225	Producing
	Summit	North Summit	3/24/38	21,649,075	56,175	21,705,250	Producing and abandoned
		South Summit	5/ 9/42	22,625,323	100,096	22,725,419	Producing and shut-in
Fayette and Somerset . .	Ohiopyle	Rugg	12/28/59	4,488,791	42,509	4,531,300	Producing and abandoned
Indiana	Cherry Hill	Crichton	1/ 9/63	3,167,014	33,580	3,237,992	Producing
		Hadden	7/11/63		37,398		
	Commodore	Wandin	5/12/81	0	0	0	Shut-in
	Jacksonville	Jacksonville Deep	11/17/56	30,001,562	208,612	30,210,174	Producing, shut-in, and abandoned
	Living Waters	Uniontown	2/21/80	0	90,283	90,283	Producing
	Nolo	Carney Run	4/28/80	0	0	0	Shut-in
		Nolo Deep	9/30/56	13,903,387	31,971	13,935,358	Producing
	Strongstown	Lizowitz	6/19/54	9,286,609	605,266	9,891,875	Producing
		Pineton	12/20/69	9,826,916	1,021,468	10,848,384	Producing
Jefferson	Frostburg	Elk Run	6/30/65	48,455,636	291,625	48,747,261	Producing and shut-in

Lawrence	Neshannock Creek		12/14/79	0	0	0	Shut-in
Lycoming	Salladasburg	*Total*	*6/24/76*	*33,228*	*2,895*	*36,123*	*Producing and shut-in*
		Tombs Run	5/26/78	0	0	0	Abandoned
McKean	Bradford	Cyclone	2/18/74	1,113,616	165,319	1,278,935	Producing
		Minard Run	1/10/75	12,200	500	12,700	Producing
	Corydon		9/ 8/72	30,705	not available	30,705	Producing?
Mercer	Jamestown		1/18/79	0	36,398	36,398	Producing and shut-in
	Maysville	*Total*	*11/11/77*	*5,400*	*16,732*	*22,132*	*Producing*
		West Salem	11/11/77	0	5,628	5,628	Producing
	New Hamburg	Good Hope	2/ 2/79	0	17,392	17,392	Producing
	Sharon	Sharon Deep	2/26/77	7,600	246,570	254,170	Producing
	Utica	French Creek	7/26/81	0	0	0	Shut-in
	Wheatland		7/24/63	296,631	105,411	402,042	Producing
	Wolf Creek	Kilgore	10/26/66	526,506	187,162	713,668	Producing
Potter	Ulysses		10/ 2/39	4,392,477	20,422	4,457,380	Producing
		Newfield	4/ 2/62		44,481		
Somerset	Bakersville		1/14/79	131,257	196,315	327,572	Producing
	Boswell		11/11/58	11,254,314	148,242	11,432,518	Producing
		Edie	10/18/68		7,058		
		Snyder	6/16/60		22,904		
	Brier Knob		7/ 4/80	0	0	0	Shut-in
	Heckman Hollow		8/16/77	196,973	446,778	643,751	Producing
	Kimmel		5/ 9/80	28,062	223,240	251,302	Producing
	Rockwood	*Total*	*5/28/79*	*295,312*	*89,829*	*385,141*	*Producing and shut-in*
		Gebhart	11/26/79	0	0	0	Shut-in
	Shade Creek		10/ 3/77	156,936	119,890	276,826	Producing
	Shamrock		5/10/79	1,282,906	488,089	1,770,995	Producing
	Shanksville		9/22/73	4,114,668	466,199	4,580,867	Producing
	Somerset East		10/ 7/79	0	0	0	Shut-in
	Somerset West		1/ 6/78	646,639	47,131	693,770	Producing
Venango	Barkeyville	Duncan	4/ 5/73	118,644	5,450	124,094	Producing
	Franklin-Oak Forest	Galloway	11/12/73	59,641	5,579	65,220	Producing
	Wesley	Irwin	12/ 1/72	295,872	18,309	314,181	Producing

Figure 20. (Continued)

County	Field	Pool	Discovery date	Cumulative production at end of 1980 (in Mcf*)	Production 1981 (in Mcf*)	Cumulative production at end of 1981 (in Mcf*)	Status of field or pool at end of 1980
Warren.	Columbus	Dewey Corners	2/10/81	0	0	0	Shut-in
		Whites Run	10/30/75	0	6,486	6,486	Producing
	County Line		1/31/81	0	0	0	Shut-in
	Sanford	Trimm	2/19/81	0	0	0	Shut-in
	Selkirk	Three Bridge	2/29/81	0	0	0	Shut-in
	Stillwater	*Total*	*9/26/79*	*0*	*276,806*	*276,806*	*Producing and shut-in*
		Freehold	8/ 5/80	0	70,420	70,420	Producing and shut-in
		Savko	9/ 5/80	0	115,189	115,189	Producing
	Sugar Grove	Loucks	5/ 3/81	0	0	0	Shut-in
	Youngsville	Blue Eye	11/ 3/80	0	0	0	Shut-in
		Pikes Rocks	5/ 1/81	0	3,237	3,237	Producing
Washington	Lone Pine	Glyde	9/ 6/61	137,485	4,735	142,220	Producing
Westmoreland	Crabtree	Dry Ridge	8/25/46	5,972,463	149,651	6,122,114	Producing and abandoned
	Jacobs Creek	Bailey	12/26/61	2,171,642	77,100	2,248,742	Producing and shut-in
	Linn Run		4/25/79	5,344	34,450	39,794	Producing
	Lycippus	*Total*	*8/17/49*	*6,649,680*	*32,664*	*6,682,344*	*Producing*
		St. Boniface Chapel	9/13/56	5,910,252	32,664	5,942,916	Producing
	Murrysville	*Total*	*11/ 3/1878*	*761,012*	*9,904*	*770,916*	*Producing*
		Duquesne	8/ 8/65	632,895	9,904	642,799	Producing
	New Alexandria	Kahl	10/23/62	11,023,325	186,743	11,210,068	Producing

Westmoreland and Somerset.	Johnstown	Baldwin	5/22/60	11,434,749	20,193	11,680,882	Producing
		Beck	5/16/57		225,940		
		Williams	2/14/58	18,795,333	158,424	18,953,757	Producing
	Seven Springs	*Total*	*12/ 5/58*	*7,885,114*	*64,169*	*7,949,283*	*Producing*
		Blair Oriskany	12/ 5/58	6,429,836	37,702	6,477,453	Producing
		Tunnel	3/10/65		9,915		
		Seven Springs	8/ 3/66	742,855	16,552	759,407	Producing

*Mcf — thousand cubic feet

Figure 21. Deep gas production in Pennsylvania in 1981 by producing formation

Producing formation	*Cumulative production at end of 1980 (in Mcf)*	*Production in 1981 (in Mcf)*	*Cumulative production at end of 1981 (in Mcf)*
Onondaga Limestone	1,114,083	165,319	1,279,402
Oriskany Sandstone and Huntersville Chert	1,236,064,370	8,115,895	1,244,180,265
Bass Islands Dolomite	11,275	0	11,275
Lockport Dolomite	526,506	187,162	713,668
Medina Group	48,521,681	12,697,862	61,219,543
Tuscarora Sandstone	92,709	114,726	207,435
Gatesburg Formation and Little Falls Dolomite	202,200	500	202,700
TOTAL	1,286,532,824	21,281,464	1,307,814,288

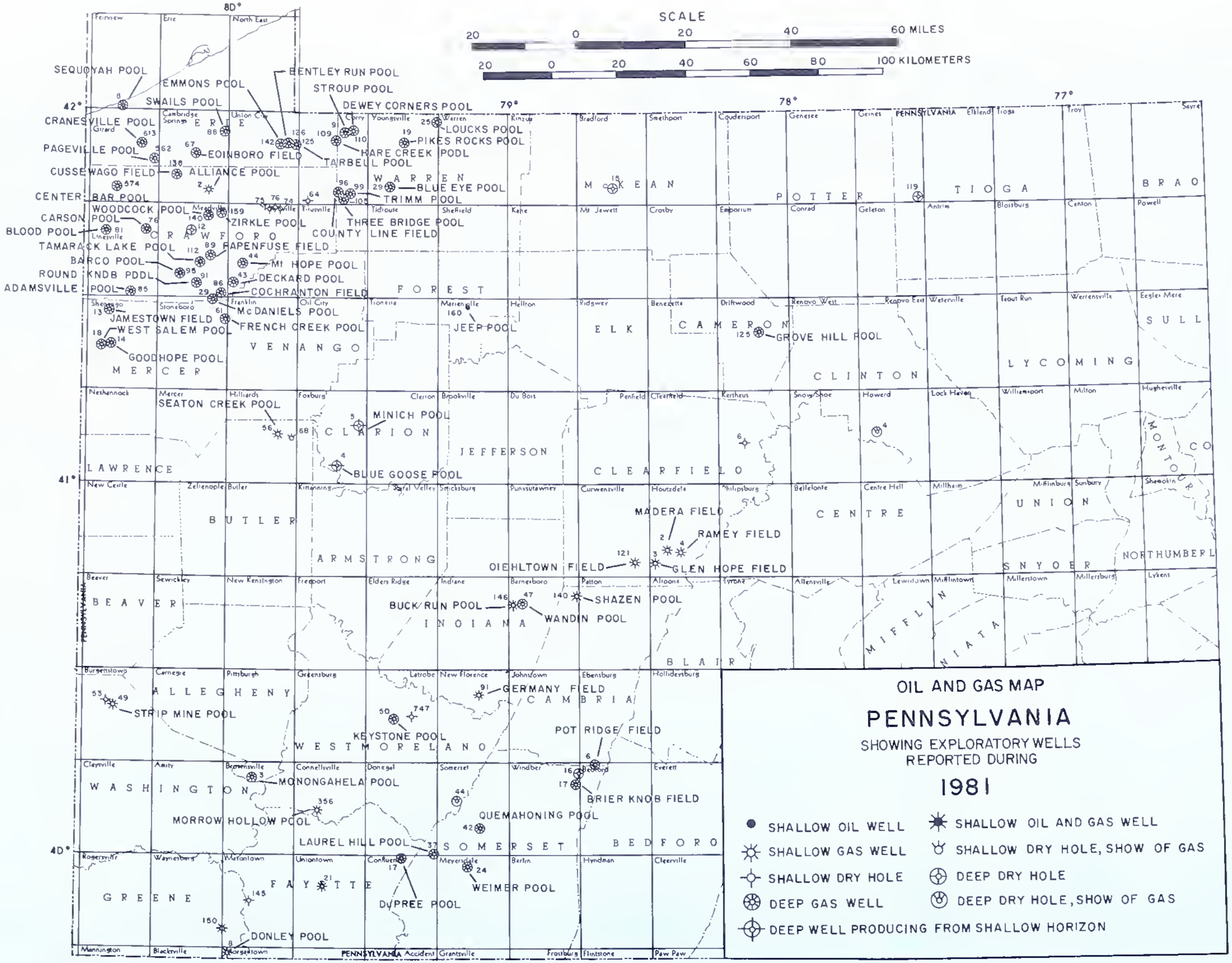

Figure 22. Map of exploratory wells in Pennsylvania reported in 1981

ment drilling in Pennsylvania in 1981 increased 65 percent (1,194 wells) over 1980. The success rate for all development drilling was 98 percent.

Figure 23 shows statistics for both exploratory and development drilling in Pennsylvania in 1981, with wells classified as gas, oil, oil and gas, and dry. The figure also includes data on footage drilled in each category. Statistics on service wells are included in the figure as separate entries. Figure 24 shows exploratory drilling in Pennsylvania in 1981 by exploratory classification and type of well.

HIGHLIGHTS OF 1981 EXPLORATION

The majority of exploratory drilling in 1981 occurred in the Lower Silurian Medina Group of northwestern Pennsylvania. Drilling in unproven areas was spurred by the expectation of, and eventual implementation of, a tight formation designation for the Medina under Section 107 (High-Cost Gas) of the NGPA. The higher allowable price for gas (as much as $5.10 in December 1981) stimulated activity in an area that has historically had relatively little activity. Medina drilling in 1981 more or less defined the best prospective areas for production. After about midyear, most of the drilling was either infill-type or a simple extension of the older limits. Most of the drilling was centered in Crawford and Erie Counties, but the stimulation of drilling also occurred in Warren and Mercer Counties, with the prospect of drilling in Venango County in the future.

Six new Medina fields and 28 new pools, including 9 deeper pool discoveries (Medina pools discovered in Upper Devonian fields), were reported from northwestern Pennsylvania in 1981. The wells that discovered these new fields and pools averaged 4,768 feet in depth.

The Middle Silurian Lockport Dolomite has been known as a good producing formation in Ohio and West Virginia for many years, but, with the exception of the Kilgore pool in Mercer County, the Lockport has provided only shows of oil and gas in Pennsylvania. The Kilgore pool, discovered in the 1960's, is situated on the flank of the Henderson dome and probably represents a reservoir with a structural/stratigraphic trap. No other occurrences of this sort are known in Pennsylvania. The Goe Pro #1 Bartko well in Erie County is, therefore, an interesting well in that it is the first well in Pennsylvania outside of the Kilgore pool to produce from the Lockport. Nothing is certain about the well other than the depth to production (3,063 feet) and the estimated initial open flow (20,000 Mcfgpd). Unless this is simply a bubble of gas which blows down quickly, the Lockport should become another potential target for the western Erie and Crawford County area.

The program of cooperative drilling by the Amoco Production Company and the Ashtola Production Company begun in 1977 continued in 1981 with the drilling of 10 wells, including 2 dry holes, to the Oriskany Sandstone of Somerset County. This drilling resulted in 1 new field and 3 new pools in the Oriskany and the Huntersville Chert. The new field, called the Brier Knob

Figure 23. Exploratory and primary development and drilling footages reported, 1981 and 1980

Type of well	*1981 Wells*	*1981 Footage*	*1980 Wells*	*1980 Footage*	*% Change in footage*
Exploratory					
Gas	359	1,626,009	102	478,169	
Oil	18	28,702	6	13,222	
Oil and gas	4	14,166	5	18,101	
Dry	24	94,877	19	121,167	
Total (% successful)	*405 (94%)*	*1,763,754*	*132 (86%)*	*630,659*	*+180*
Development					
Gas	1,318	4,881,843	998	3,616,576	
Oil	1,623	1,894,939	771	920,630	
Oil and gas	12	41,347	19	50,490	
Dry	65	148,786	36	111,633	
Total (% successful)	*3,018 (98%)*	*6,966,915*	*1,824 (98%)*	*4,699,329*	*+ 48*
Miscellaneous wells					
Service	131	276,645	64	131,287	+111
TOTAL ALL WELLS DRILLED	*3,554 (97%)*	*9,007,314*	*2,020*	*5,461,275 (97%)*	*+ 65*

Figure 24. Exploratory drilling in Pennsylvania by classification and type of well, 1981

Classification and type of well	*No. of wells*	*Footage*
NEW FIELD WILDCATS		
Gas	14	69,470
Dry	5	42,031
Subtotal	*19*	*111,501*
NEW POOL WILDCATS		
Gas	27	140,553
Dry	1	3,870
Subtotal	*28*	*144,423*
DEEPER POOL TESTS		
Gas	16	80,636
Oil	1	2,118
Oil and gas	1	2,272
Dry	3	12,577
Subtotal	*21*	*97,603*
SHALLOWER POOL TESTS		
Gas	4	14,417
Dry	6	4,804
Subtotal	*10*	*19,221*
OUTPOST EXTENSIONS		
Gas	298	1,320,933
Oil	17	26,584
Oil and gas	3	11,894
Dry	9	31,595
Subtotal	*327*	*1,391,006*
GRAND TOTAL EXPLORATORY WELLS	*405*	*1,763,754*

field, had an after treatment open flow of 2,000 Mcfgpd from 9,100 feet. Amoco and Ashtola also reported a small amount of production from the Huntersville Chert in Fayette County. This formation was treated in the Amoco/Ashtola #1 DuPree well at 7,690 feet for an open flow of 280 Mcfgpd.

The Pennzoil Company discovered Oriskany production in the #1 Warr well in Indiana County. The production information was unavailable, but the well is classified as a deeper pool discovery in the Commodore field. Other Oriskany discoveries included the Pot Ridge field in Cambria County, the Grove Hill pool, an extension of the Punxsutawney-Driftwood field in Cameron County, and the Center Bar pool, a shallower pool discovery in Conneaut field, Crawford County.

The Devonian shales of Pennsylvania, which have produced gas, normally in uncommercial quantities, since 1860, were the target of several successful drilling attempts in 1981. Besides development drilling in Erie County, 3 new pools were discovered in the deeper shale zones—the Upper Devonian West Falls, Sonyea, and Genesee Formations and the Middle Devonian Marcellus Formation. The Combustion Engineering #1 Fee well, one of the original U. S. Department of Energy Eastern Gas Shales Project wells, was drilled in 1979 and completed that year in the Marcellus and Genesee Formations. The well, which discovered the Monongahela pool in the Forward field, Allegheny County, was subsequently reevaluated and treated in the Upper Devonian sand section as a commingled shale and Bradford Group well. The driller reported the sands as Benson, Alexander, and Grit, drillers' sand names used in West Virginia for sandstone lenses developed in the Elk Group. Correlation of the Combustion Engineering well with other deep wells in the area indicates, however, that the treated zones more closely tie in with the Tiona, Sheffield, and Third Bradford sands of the Bradford Group. The Bradford Group is not well developed in this area, making correlation and identification of the sands difficult.

Two shale wells in Clarion County discovered new pools in separate fields. The Gearhart and Odell #1 Connor and the Gearhart and Odell #2 Minich discovered the Blue Goose pool in the Fiddlers Run field and the Minich pool in the Canoe Ripple field, respectively. Both wells were spudded as tests of the Oriskany Sandstone, but were completed as shale wells in the West Falls, Sonyea, and Genesee Formations when the Oriskany proved to be absent.

Fifteen new Upper Devonian sand fields and pools were discovered in 1981. Most of these were deeper pool tests (Bradford Group production in Venango Group development areas) and wildcats in the frontier area east of the main gas-producing belt. Exploration and development of the frontier area and the deeper sands are expected to continue as pricing incentives develop under NGPA.

Perhaps the most spectacular and important exploratory highlight of 1981 was the spudding of the Texaco #1 Penn State Forest Tract 285 well in Clinton County. The well, in Grugan Township about 18 miles northwest of Lock Haven, is scheduled to reach a total depth of 19,500 feet in mid-1982. The well is an Eastern Overthrust test of the Cambro-Ordovician section.

Figures 22, 25, and 26 include a map showing locations of selected exploratory wells reported in 1981, a table showing all 1981 new field and new pool discoveries, and a table showing the significant exploratory failures reported in 1981.

GEOPHYSICAL ACTIVITY IN PENNSYLVANIA

The seismograph is the principal nondrilling exploratory tool used in Pennsylvania for the exploration of oil and gas. The use of seismic tools is advantageous in that it can give approximate to excellent indications of the

Figure 25. Reported new field and new pool discoveries in Pennsylvania, 1981

County and permit no.	*Quadrangle and map no.*	*Operator well no. and lease*	*Completion date (M-Day-Y)*	*Total depth (feet)*	*Name of formation at T.D.**	*Prod. depth (feet)*	*Prod. formation or zone**	*Initial daily prod.*	*Field or pool name*	*Explor. class***
Allegheny ALL-20980	Brownsville 3	Combustion Engineering, Inc. #01 Combustion Engineering	3/25/79	7,512	Onondaga (D)	7,487	Marcellus (D)	280 Mcf	Monongahela pool	DPD
Butler BUT-20842	Hilliards 56	H. K. Drilling, Inc. #3 Charles B. Dreshman	3/24/80	2,272	Canadaway (D)	2,183	Canadaway (D)	65 Mcf	Seaton Creek pool	DPD
Cambria CBA-20085	Barnesboro 140	Consolidated Gas Supply Corp. #1 Roy D. Leamer	11/20/80	3,654	Canadaway (D)	3,462	Canadaway (D)	124 Mcf	Shazen pool	NPD
Cambria CBA-20095	Bedford 6	Amoco Production Company #1 Cambria Mining Gas Unit	5/21/81	9,205	Helderberg (D)	9,014	Oriskany (D)	2,300 Mcf	Pot Ridge field	NFD
Cameron CAM-20067	Driftwood 125	Consolidated Gas Supply Corp. WN-1823 Commonwealth of PA	2/18/81	7,167	Helderberg (D)	7,080	Oriskany (D)	335 Mcf	Grove Hill pool	NPD
Clarion CLA-20796	Foxburg 4	F. Gearhart and S. Odell #1 Catherine Conner	12/10/79	6,095	Helderberg (D)	5,418	Genesee (D)	313 Mcf	Blue Goose pool	DPD
Clarion CLA-20864	Foxburg 5	F. Gearhart and S. Odell #2 Donald H. Minich	10/ 2/80	5,805	Salina (S)	4,949	Genesee (D)	370 Mcf	Minich pool	DPD
Clearfield CLE-21000	Curwensville 121	Watson and Swanson/Quinta Oil and Gas #1 Elwood Burgess	1/ 6/81	3,530	Canadaway (D)	3,322	Canadaway (D)	557 Mcf	Diehltown field	NFD
Clearfield CLE-21010	Houtzdale 2	Watson and Swanson/Quinta Oil and Gas #1 Buterbaugh Brothers	12/18/80	3,530	Canadaway (D)	3,354	Canadaway (D)	375 Mcf	Madera field	NFD
Clearfield CLE-21011	Houtzdale 3	Watson and Swanson/Quinta Oil and Gas #1 Buterbaugh Brothers	12/ 5/80	3,533	Canadaway (D)	3,376	Canadaway (D)	68 Mcf	Glen Hope field	NFD
Clearfield CLE-21023	Houtzdale 4	Watson and Swanson/Quinta Oil and Gas #1 Walter Kitko	12/29/80	3,626	Canadaway (D)	3,450	Canadaway (D)	134 Mcf	Ramey field	NFD
Crawford CRA-20563	Girard 574	Center Bar Gas Company #2 Earl E. Hamilton	2/24/81	2,424	Oriskany (D)	2,420	Oriskany (D)	481 Mcf	Center Bar pool	SPD
Crawford CRA-20808	Linesville 76	Mitchell Energy Corporation #1-58 Robert O. Carlson	2/23/81	4,457	Queenston (O)	4,374	Medina (S)	307 Mcf	Carlson pool	NPD
Crawford CRA-20829	Townville 43	Cabot Oil and Gas Corporation #1 David Holler	11/ 4/80	5,316	Queenston (O)	5,128	Medina (S)	698 Mcf	Deckard pool	NPD
Crawford CRA-20830	Townville 44	Cabot Oil and Gas Corporation #1 Ila Smith	10/31/80	5,331	Queenston (O)	5,116	Medina (S)	850 Mcf	Mt. Hope pool	NPD
Crawford CRA-20834	Meadville 86	Cabot Oil and Gas Corporation #1 John Rynd	11/16/80	5,286	Queenston (O)	5,147	Medina (S)	1,970 Mcf	Cochranton field	NFD
Crawford CRA-20876	Meadville 89	Cabot Oil and Gas Corporation #2 Dale V. Hamilton	12/ 8/80	5,196	Queenston (O)	5,009	Medina (S)	1,400 Mcf	Papenfuse field	NFD
Crawford CRA-20899	Meadville 91	Cabot Oil and Gas Corporation #1 Walter Sutton	11/12/80	5,214	Queenston (O)	5,211	Medina (S)	2,420 Mcf	Round Knob pool	NPD
Crawford CRA-20930	Meadville 112	Goe Pro/Blackfoot Cherokee Res. #1 Gordon Emig	12/12/80	5,136	Queenston (O)	5,015	Medina (S)	1,100 Mcf	Tamarack Lane pool	DPD

Figure 25. *(Continued)*

County and permit no.	Quadrangle and map no.	Operator well no. and lease	Completion date (M-Day-Y)	Total depth (feet)	Name of formation at T.D.*	Prod. depth (feet)	Prod. formation or zone*	Initial daily prod.	Field or pool name	Explor. class**
Crawford CRA-20931	Meadville 95	Goe Pro/Blackfoot Cherokee Res. #1 Raymond Shafer	12/13/80	5,089	Queenston (O)	4,971	Medina (S)	3,000 Mcf	Barco pool	NPD
Crawford CRA-20943	Linesville 81	Mitchell Energy Corporation #1-75 D. J. Frye	12/17/80	4,158	Queenston (O)	4,112	Medina (S)	646 Mcf	Blood pool	NPD
Crawford CRA-21115	Stoneboro 29	Cabot Oil and Gas Corporation #1 John Roberts	3/16/81	5,567	Queenston (O)	5,446	Medina (S)	6,065 Mcf	McDaniels pool	NPD
Crawford CRA-21195	Cambridge Springs 2	Herb Orr Drilling Company #1 Cambridge Tire Company	6/30/81	1,000	Canadaway (D)	1,000	Canadaway (D)	NA	Alliance pool	SPD
Crawford CRA-21212	Linesville 85	Cabot Oil and Gas Corporation #1 Eli J. Troyer	8/ 5/81	4,642	Queenston (O)	4,464	Medina (S)	1,100 Mcf	Adamsville pool	DPD
Crawford CRA-21226	Meadville 140	Berea Oil and Gas Corporation #1 R. McClellan	7/21/81	4,645	Queenston (O)	4,570	Medina (S)	2,000 Mcf	Woodcock pool	DPD
Crawford CRA-21234	Cambridge Springs 138	Goe Pro, Incorporated #1 Robert Hartenbach	6/19/81	4,257	Queenston (O)	4,093	Medina (S)	815 Mcf	Cussewago field	NFD
Crawford CRA-21238	Meadville 159	Berea Oil and Gas Corporation #1 K. and C. Zirkle	6/22/81	4,846	Queenston (O)	4,760	Medina (S)	1,000 Mcf	Zirkle pool	NPD
Erie ERI-20942	Fairview 8	Gull Lake Energy Resources #1 James Hall	1/20/80	2,923	Queenston (O)	2,717	Medina (S)	NA	Sequoyah pool	NPD
Erie ERI-21039	Cambridge Springs 88	Vineyard Oil and Gas Company #1 Ernest A. Marsh	6/27/80	3,932	Queenston (O)	3,863	Medina (S)	2,400 Mcf	Swails pool	DPD
Erie ERI-21102	Union City 125	C and C Troyer Brothers #1 Clinton H. Smith	9/12/80	4,528	Queenston (O)	4,376	Medina (S)	250 Mcf	Tarbell pool	NPD
Erie ERI-21173	Cambridge Springs 67	C and C Troyer Brothers #1 Charles B. Austin	10/ 4/80	4,016	Queenston (O)	3,872	Medina (S)	1,100 Mcf	Edinboro field	NFD
Erie ERI-21185	Union City 126	C and C Troyer Brothers #1 Donald Troyer	10/13/80	4,407	Queenston (O)	4,238	Medina (S)	200 Mcf	Bentley Run pool	NPD
Erie ERI-21192	Girard 562	Zodiac Resources, Inc. #1 Joseph and Florence Madden	10/10/80	3,798	Queenston (O)	3,722	Medina (S)	50 Mcf	Pageville pool	NPD
Erie ERI-21260	Union City 142	Blackfoot Cherokee Energy, Inc. #1 Neal Emmons	12/30/80	4,465	Queenston (O)	4,298	Medina (S)	115 Mcf	Emmons pool	NPD
Erie ERI-21416	Corry 109	Envirogas, Incorporated #2 Dennis Roth	6/26/81	4,473	Queenston (O)	4,384	Medina (S)	1,440 Mcf	Hare Creek pool	NPD
Erie ERI-21430	Girard 613	Goe Pro, Incorporated #1 George J. Bartko	6/17/81	3,063	Lockport (S)	3,063	Lockport (S)	20,000 Mcf	Cranesville pool	SPD
Fayette FAY-20254	Uniontown 21	Cove Run Farm #2 Cove Run Farm	2/19/80	4,030	Canadaway (D)	3,766	Canadaway (D)	9 Mcf	Unnamed Noncommercial	NFD

Fayette FAY-20259	Confluence 17	Amoco/Ashtola Production Companies #1 Mary M. DuPree	8/23/80	7,930	Helderberg (D)	7,690	Huntersville Chert (D)	280 Mcf	DuPree pool	SPD
Forest FOR-23281	Marienville 160	Quaker State Oil Refining Corp. #3Q Mintz-Baughman	12/ 5/81	2,118	Canadaway (D)	2,011	Canadaway (D)	5 BO	Jeep pool	DPD
Greene GRE-21504	Morgantown 8	Delta Drilling, Incorporated #1 Donley, Raber, Faliquist	12/31/79	2,960	Canadaway (D)	2,678	Canadaway (D)	115 Mcf	Donley pool	DPD
Greene GRE-21527	Waynesburg 150	Peoples Natural Gas Company #1 H. Cree	3/28/80	3,039	Canadaway (D)	2,808	Canadaway (D)	10 Mcf	Unnamed Noncommercial	DPD
Indiana IND-25485	Barnesboro 146	Delta Drilling Company #1 William H. Beck	12/15/80	3,508	Canadaway (D)	3,015	Canadaway (D)	1,007 Mcf	Buck Run pool	NDP
Indiana IND-26008	New Florence 91	Phillips Production Company #1 Wilbur D. McClure	1/24/81	3,824	Canadaway (D)	3,713	Canadaway (D)	650 Mcf	Germany field	NFD
Indiana IND-26193	Barnesboro 47	Pennzoil Company #1 Leota Warr	5/12/81	7,694	Oriskany (D)	7,694	Oriskany (D)	NA	Wandin pool	DPD
Mercer MER-20171	Shenango 13	David Gaon and Spencer Stillman #1 Joseph, Rose and John Shine	1/18/79	4,722	Queenston (O)	4,527	Medina (S)	1,100 Mcf	Jamestown field	NFD
Mercer MER-20172	Shenango 14	David Gaon and Spencer Stillman #1 Frederick A. Ohl	2/ 2/79	4,839	Queenston (O)	4,754	Medina (S)	680 Mcf	Goodhope pool	DPD
Mercer MER-20205	Shenango 18	David Gaon and Spencer Stillman #1 Steve Bielobocky	2/17/81	5,070	Queenston (O)	4,881	Medina (S)	550 Mcf	Salem pool	NPD
Mercer MER-20243	Stoneboro 61	Mitchell Energy Corporation #1-99 E. and J. Peterson	7/26/81	5,700	Queenston (O)	5,649	Medina (S)	512 Mcf	French Creek pool	DPD
Somerset SOM-20100	Windber 17	Amoco Production Company #1 Commonwealth of PA-Tract #221	7/ 4/80	9,321	Helderberg (D)	9,100	Oriskany (D)	2,000 Mcf	Brier Knob field	NFD
Somerset SOM-20101	Somerset 42	Amoco Production Company #1 Eldon H. Barkley Gas Unit	8/ 4/80	8,731	Helderberg (D)	8,506	Huntersville Chert (D)	115 Mcf	Quemahoning pool	NPD
Somerset SOM-20106	Meyersdale 24	Amoco Production Company #1 Earl H. Weimer Gas Unit	10/22/80	9,243	Helderberg (D)	9,082	Oriskany (D)	2,600 Mcf	Weimer pool	NPD
Somerset SOM-20113	Donegal 37	Amoco Production Company #1 William Schmidt Gas Unit	3/ 5/81	8,335	Helderberg (D)	8,264	Oriskany (D)	1,200 Mcf	Laurel Hill pool	NPD
Warren WAR-28184	Corry 91	U. S. Energy Development Corp. #1 Paul T. Stroup	7/28/80	4,487	Queenston (O)	4,379	Medina (S)	505 Mcf	Stroup pool	NPD
Warren WAR-28407	Youngsville 29	U. S. Energy Development Corp. #1 Robert Weaver	11/ 3/80	5,001	Queenston (O)	4,835	Medina (S)	100 Mcf	Blue Eye pool	NPD
Warren WAR-28494	Corry 96	Berea Oil and Gas Corporation #1 F. & E. Nichols	1/31/81	5,394	Queenston (O)	5,247	Medina (S)	280 Mcf	County Line field	NFD
Warren WAR-28497	Corry 105	Berea Oil and Gas Corporation #1 M. Z. Lay	2/29/81	5,447	Queenston (O)	5,308	Medina (S)	497 Mcf	Three Bridge pool	DPD
Warren WAR-28499	Corry 99	Berea Oil and Gas Corporation #5 M. J. Wojtowicz	2/19/81	5,453	Queenston (O)	5,302	Medina (S)	962 Mcf	Trimm pool	DPD
Warren WAR-28915	Corry 110	U. S. Energy Development Corp. #1 Frank Savko	2/10/81	4,409	Queenston (O)	4,404	Medina (S)	2,930 Mcf	Dewey Corners pool	NPD

Figure 25. *(Continued)*

County and permit no.	*Quadrangle and map no.*	*Operator well no. and lease*	*Completion date (M-Day-Y)*	*Total depth (feet)*	*Name of formation at T.D.**	*Prod. depth (feet)*	*Prod. formation or zone**	*Initial daily prod.*	*Field or pool name*	*Explor. class***
Warren WAR-29159	Youngsville 19	Arrowhead Gas Producers, Inc. #1 William Saunders	5/ 1/81	4,985	Queenston (O)	4,940	Medina (S)	2,500 Mcf	Pikes Rocks pool	DPD
Warren WAR-29265	Youngsville 25	Texas International Petroleum Corp. #1 Calvin Penley	7/10/81	4,920	Queenston (O)	4,764	Medina (S)	769 Mcf	Loucks pool	NPD
Washington WAS-21349	Burgettstown 47	Zenith Exploration Company #2 Audrey Hillman Hilliard	2/19/81	2,752	Canadaway (D)	2,723	Canadaway (D)	97 Mcf	Strip Mine pool	DPD
Westmoreland WES-21634	Connellsville 356	Louden Properties Company #880-1 Westmoreland-Fayette Council	9/11/80	3,726	Canadaway (D)	2,294	Canadaway (D)	112 Mcf	Morrow Hollow pool	NPD
Westmoreland WES-21883	Latrobe 30	Ter-Ex, Incorporated #2 Ramaley	7/10/81	7,730	Helderberg (D)	7,536	Huntersville Chert (D)	300 Mcf	Keystone pool	NPD

*(P) = Pennsylvanian; (D) = Devonian; (S) = Silurian; (O) = Ordovician

**NFD = new field discovery; NPD = new pool discovery; DPD = deeper pool discovery; SPD = shallower pool discovery

Figure 26. Selected exploratory failures reported in Pennsylvania, 1981

County and permit no.	*Quad. and map no.*	*Operator well no. and lease*	*Completion date (M-Day-Y)*	*Total depth (feet)*	*Name of formation at T.D.**	*Explor. class***
Butler BUT-20886	Hilliards 68	Watson and Swanson, Inc. #1 Mary E. Polm	9/25/80	2,350	Canadaway (D)	DPT
Clearfield CLE-20974	Karthaus 6	Consolidated Gas Supply Corp. #1 Richard F. Gearhart	11/12/80	5,302	Catskill (D)	NFW

Clinton CLI-20197	Howard 4	Amoco Production Company #1 General Refractories Farm	8/27/80	11,589	Tuscarora (S)	NFW
Crawford CRA-20552	Meadville 12	Mead Nursing Home #1 Mead Nursing Home	11/13/78	704	Canadaway (D)	SPT
Crawford CRA-20772	Townville 74	Wainoco Oil and Gas Company #1 Elmer G. Snow	8/27/80	639	Canadaway (D)	SPT
Crawford CRA-20773	Townville 75	Wainoco Oil and Gas Company #1 William S. and Betty Donor	8/21/80	714	Canadaway (D)	SPT
Crawford CRA-20775	Townville 76	Wainoco Oil and Gas Company #2 Georgia H. Heath	8/25/80	689	Canadaway (D)	SPT
Crawford CRA-20778	Corry 64	Wainoco Oil and Gas Company #2 George M. and L. Arlene Bangs	9/ 3/80	830	Canadaway (D)	SPT
Fayette FAY-20277	Masontown 145	Ashtola Production Company #1 Richard E. Cerullo	7/13/81	4,531	Canadaway (D)	DPT
McKean MCK-39885	Bradford 15	Pennzoil Company #1 Alice Shurwin	10/23/81	5,696	Helderberg (D)	DPT
Somerset SOM-20103	Windber 16	Amoco Production Company #1 Commonwealth of PA Tract 222	10/14/80	9,280	Helderberg (D)	NFW
Tioga TIO-20104	Gaines 119	Wilmoth Interests, Inc. #1A State of PA Tract 319	1/23/81	6,832	Helderberg (D)	NFW
Washington WAS-21374	Burgettstown 53	C. C. Wharton, Jr. #4 Dornan	10/ 7/81	1,228	Big Injun (M)	SPT
Westmoreland WES-21589	Latrobe 747	Mid-East Oil Company #1 Cando Dinco	1/ 3/80	3,870	Canadaway (D)	NPW
Westmoreland WES-21705	Somerset 44	Peoples Natural Gas Company #1 James T. Washnock	11/13/80	9,028	Hamilton (D)	NFW

*(M) = Mississippian; (D) = Devonian; (S) = Silurian

**NFW = new field wildcat; NPW = new pool wildcat; DPT = deeper pool test; SPT = shallower pool test attitude of rocks and the depth of potential hydrocarbon reservoirs by measuring the travel time for vibrations generated at the surface to reach the rock. Mechanically generated seismic pulses (e.g., Vibroseis) and explosive techniques are the most widely used in Pennsylvania. Seismic work is typically done by contract crews and the intensity of activity is gauged in terms of crew-months. As with other activities related to oil and gas, seismic activity increased in 1981 over the previous year. A total of 54.75 crew-months was spent in seismic service in Pennsylvania, a 21 percent increase over 1980. Seismic surveys were reported in Bedford, Blair, Cambria, Carbon, Centre, Clarion, Clearfield, Clinton, Columbia, Franklin, Fulton, Huntingdon, Juniata, Luzerne, Lycoming, Mercer, Mifflin, Perry, Pike, Potter, Schuylkill, Snyder, Somerset, Sullivan, Susquehanna, Tioga, Wayne, and Westmoreland Counties. The companies involved in these surveys, either in the funding or the actual survey, were Atlantic Richfield, Amoco, Gulf, Texaco, Exxon, Patrick Petroleum, Berea Oil and Gas, Consolidated Gas, Columbia Gas Supply, Adobe Oil and Gas, and National Fuel Gas. There was also a reported "group shoot" involving several companies. Oil and gas companies spent a total of $12,300,000 on this activity, averaging $225,000 per crew per month.

ACTIVITIES ON STATE LANDS

At the end of 1981 there were 43 active oil and/or gas leases on Pennsylvania Game Commission lands. The leases covered a total of 39,890 acres. Only 14 of the leases contained the 40 active wells that produced a total of 388,051 Mcf, generating $62,772 in royalties and $63,637 in ground rentals. No oil is reported to have been produced during 1981. Also the Game Commission offered no new leases during 1981.

Total income from oil and gas activities on Pennsylvania State Forest and Park lands during 1981 amounted to $6,571,210. Rentals, including bonuses from lease sales, royalties, gas storage rentals, pipeline and compressor station rentals, and seismic surveys accounted for the income. Royalty payments from 414,156 Mcf of gas produced from State land or unitized acreage totaled $55,203. Gas storage rentals totaled $720,041 and rentals for existing exploratory acreage and past leasing programs amounted to $5,782,264. Other income for seismic surveys and for pipeline and compressor station rentals totaled $13,697.

During 1981, 96 individual tracts totaling 317,380 acres were offered for lease to industry. However, only 226,057 acres of the total was recorded by the State in 1981; the remainder is to be recorded in 1982.

At the end of 1981 512,517 acres of State Forest and Park lands was under lease for oil and gas exploration and development. Another 100,493 acres was leased for gas storage.

PROJECTS IN PROGRESS IN 1981, OIL AND GAS GEOLOGY DIVISION

OIL AND GAS BASE MAP PROGRAM

The Pennsylvania Geological Survey has completed its 15-minute base map series showing locations of oil and gas wells and the outlines of oil, gas, and gas storage fields (see Figure 27 for an index map of the area covered). The 33 base maps, which are updated periodically, each encompass four 15-minute (1:62,500 scale) topographic maps. They have 5-minute grids, quadrangle names, county boundaries, and the major streams and towns as background. All known deep wells (wells that penetrate the Middle Devonian Tully Limestone or its equivalent) and most of the shallow wells on file with the Survey have been spotted on the maps. The maps show the outlines of production and storage, an index map of the fields accompanied by a fields list, and an explanation of the symbols used on the map. For information on how to obtain paper prints of these base maps, write to the Pennsylvania Geological Survey, Oil and Gas Geology Division, 1201 Kossman Building, 100 Forbes Avenue, Pittsburgh, PA 15222.

OIL AND GAS GEOLOGY OF SOUTHWESTERN PENNSYLVANIA

by Kathleen D. Abel, John A. Harper, and Christopher D. Laughrey

Work in progress at the Bureau of Topographic and Geologic Survey, Oil and Gas Geology Division includes a study of the oil and gas geology of the area south of the Ohio River and west of the Monongahela River in Pennsylvania (Figure 28). This area covers all of Greene and Washington Counties and the southern portions of Allegheny and Beaver Counties.

The study area has some very productive oil fields, including two (McDonald-McCurdy field and Washington-Taylorstown field) considered by Lytle (1950) to be among the ten major oil fields in Pennsylvania. However, although there have been some "boom" times, oil production in these fields and in the counties of interest is low; the combined productions of Allegheny, Beaver, Greene, and Washington Counties account for only about 7 percent of the Commonwealth's total production. Some fields are essentially abandoned, or close to it. More than half of the fields have never had any enhanced recovery operations on them. Gas well drilling in the area is also low compared to other areas of Pennsylvania. Because there have been great improvements in technology since the early days of the petroleum industry and because prices for crude oil and natural gas have risen

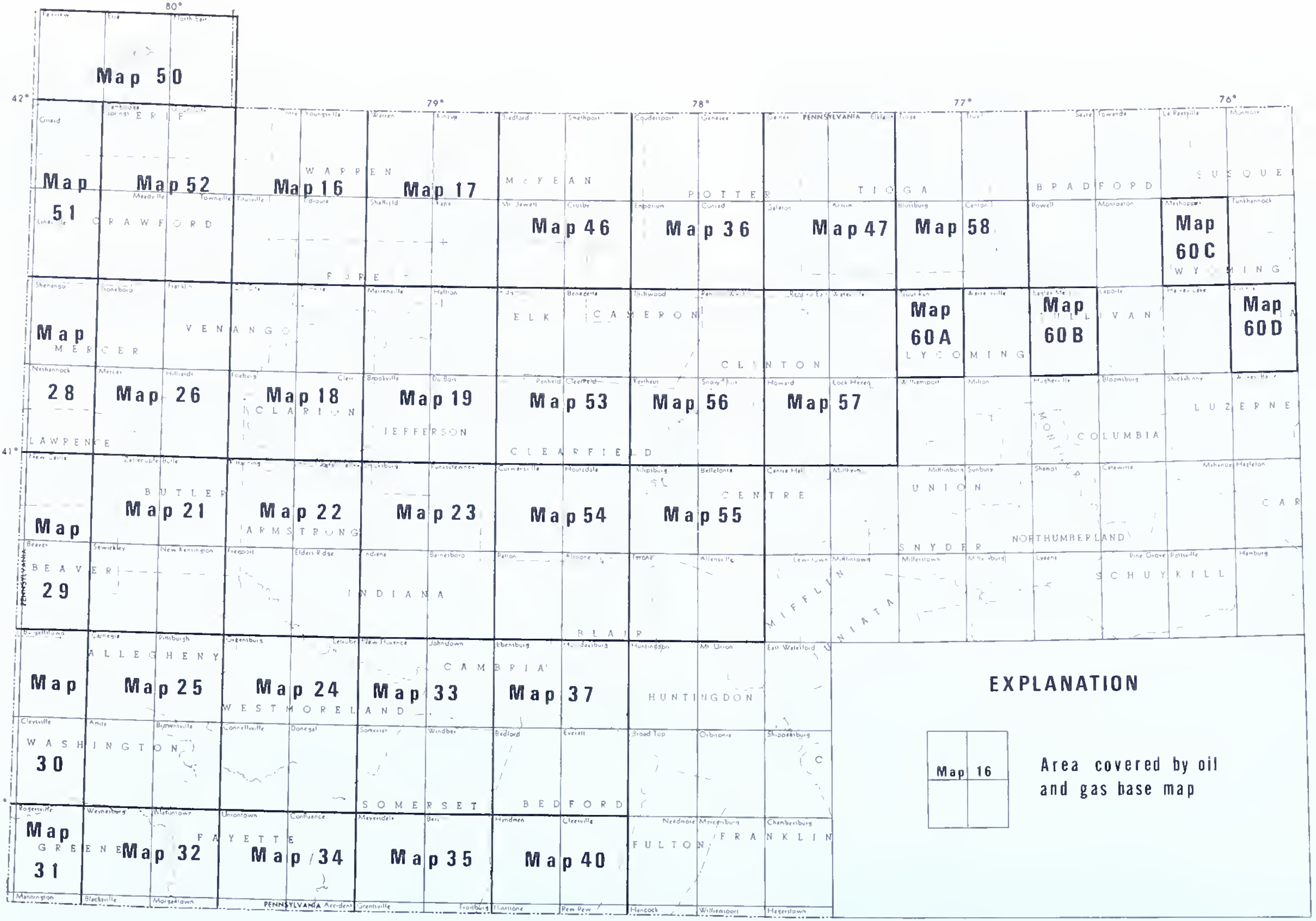

Figure 27. Index of available subsurface base maps

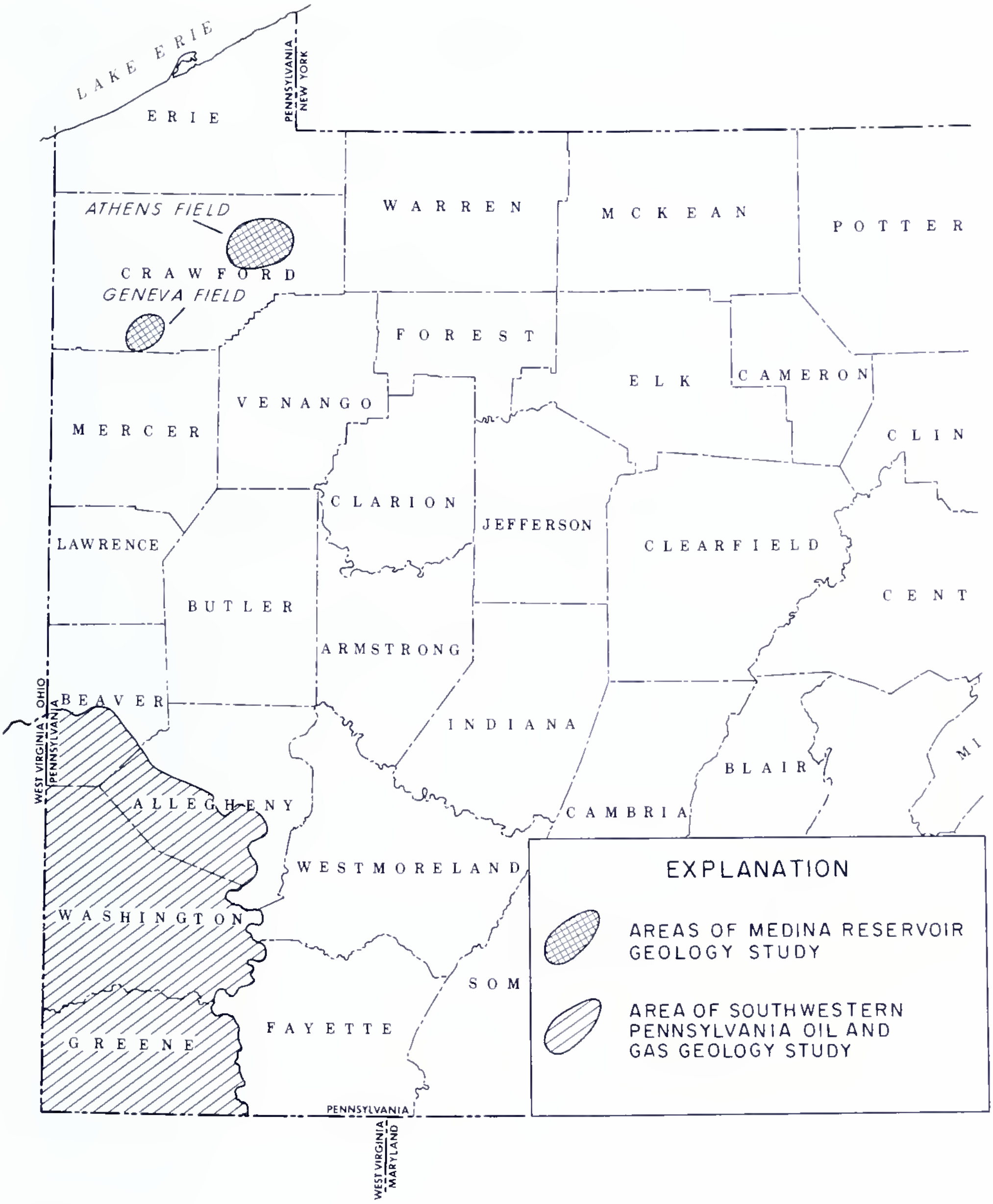

Figure 28. Map showing locations of areas covered by current Oil and Gas Geology Division projects

dramatically in recent years, the authors believe the fields in southwestern Pennsylvania have great potential for further exploitation.

The product of the research will be a report on the subsurface geology of the study area, including Upper Devonian, Mississippian, and Pennsylvanian stratigraphy, petrography of the reservoir rocks, depositional environments, and structural geology. The authors also hope to find out as much as possible about production history in order to make reasonable estimates of potential for future development. The basic research should be completed by the end of 1982.

Reference

Lytle, W. S. (1950), *Crude oil reserves in Pennsylvania*, Pennsylvania Geological Survey, 4th ser., Mineral Resource Report 32, 256 p.

RESERVOIR GEOLOGY OF THE ATHENS AND GENEVA GAS FIELDS, CRAWFORD COUNTY, PENNSYLVANIA

by Christopher D. Laughrey

Exploration and development of the Lower Silurian Medina Group clastics presently dominates deep drilling activity along the northwest flank of the central Appalachian basin. In Pennsylvania, production is from very fine to fine-grained sandstones that form low-permeability and low-pressure reservoirs across five counties in the northwest corner of the Commonwealth. Aggressive development programs in the Athens and Geneva gas fields, Crawford County (Figure 28), have provided substantial amounts of geological and engineering data in the way of cores, samples, and geophysical logs. The data present an excellent opportunity to examine the reservoir properties and internal characteristics of the low-permeability sandstones. The study was undertaken to assist development and production efforts in the Medina reservoirs of northwestern Pennsylvania.

This study consists of four major parts. The construction of a series of subsurface geologic maps and cross sections constitutes the first portion of the work. The maps and cross sections will show the external form and trend of the reservoir rocks. The maps include isopach, isolith, structure, sand-shale ratio, and cumulative production patterns.

A detailed petrographic examination of the reservoir rocks constitutes the second part of the project. The petrographic data will be discussed in terms of reservoir quality. The composition and texture of the rocks, determined from core and sample analyses, defines the character of the reservoir in terms of porosity, pore size distribution, permeability, and storage capacity.

The third part of the study consists of calibration of the geophysical logs with the details of rock composition and texture. Log curves are affected by grain size, clays, oxides, sulfides, and fluid composition. These parameters will be considered in interpreting the logs of wells for which core and sample data are unavailable.

Diagenesis of the Medina Group sandstones has had an impact on log shape. The logs respond to the amount of cement as well as the composition of detrital grains. It is important to distinguish exactly what the log signature indicates. Petrographic analyses have revealed that the gamma-ray response has been affected by secondary clays. Clay minerals have also had an effect on porosity calculated from neutron and density logs and on the fluid saturation values obtained from these logs.

The final phase of the study involves a consideration of the Medina Group fluid-system composition. Reactions between drilling and completion fluids and cements and clays are under consideration. Such interactions definitely affect the quality of reservoir production in the Athens and Geneva gas fields. For example, fresh water and sodium-based fluids are sensitive to illite-smectite or smectite clay minerals. Corrosives such as hydrochloric and hydrofluoric acids, when used to stimulate production, are likely to react with the oxides and sulfides present in the reservoir rocks.

The final report should aid operators in planning a thorough development program in the Medina Group of northwestern Pennsylvania.

OPEN-FILE REPORTS AND OTHER DATA AVAILABLE

The following reports and other data are available on open file at the Pennsylvania Geological Survey, Oil and Gas Geology Division, 1201 Kossman Building, 100 Forbes Avenue, Pittsburgh, Pennsylvania 15222.

(1) *Surface to Middle Devonian (Onondagan) Stratigraphy, Part I (STOMDES)*, 1972, by D. R. Kelley and W. R. Wagner, 15 p., 8 cross sections, vertical scale 1 inch = 100 feet.

(2) *Deep Sand Exploration and Gas Developments in Pennsylvania*, 1982, by Lajos J. Balogh, 2 map sheets, scale 1:250,000 (updated periodically).

(3) *Salina or Equivalent and Deeper Penetrations of Pennsylvania*, 1973, by D. R. Kelley and L. J. Balogh, 1 map, scale 1:500,000 (updated periodically).

(4) *Tully and Deeper Formations, Brine Analysis of Pennsylvania*, 1973, by D. R. Kelley and L. A. Heeren, 1 chart and map, scale 1:500,000.

(5) *Stratigraphic Framework of the Greater Pittsburgh Area, Parts I and II*, 1972, by W. R. Wagner and W. S. Lytle, 20 p., 9 sections in 13 sheets.

(6) *Active Gas Storage Areas Map of Pennsylvania*, 1981, by L. J. Balogh, 1 map, scale 1:500,000 (updated as needed).

(7) *Subsurface Rock Correlation Diagram, Allegheny Plateau, Pennsylvania*, 1979, J. A. Harper, 1 sheet.

There are also 33,245 drillers' records and logs, along with approximately 3,500 mechanical logs on open file at the Pennsylvania Geological Survey's Pittsburgh office. Approximately 44,000 well-data cards, compiled by the U. S. Geological Survey and the Pennsylvania Geological Survey between 1900 and 1970 as the bases of topographic-map quadrangle reports, are also on open file. In addition, the Survey has a sample library containing drill cuttings from approximately 1,200 wells, and a core storage library containing cores from 39 wells, including the five wells cored under the U. S. Department of Energy's Eastern Gas Shales Program. All cuttings and cores are available for inspection and study.

ACTIVITIES OF THE OIL AND GAS REGULATION DIVISION

SUMMARY OF REGULATORY FUNCTIONS

The Oil and Gas Regulation Division administers several different laws affecting the oil and gas industry. Act 225 regulates the permitting of oil and gas wells, the underground storage of gas, mining around wells, and the methods of casing and plugging oil and gas wells. Act 359, known as the Oil and Gas Conservation Law, concerns only those wells that meet both of its two specific requirements: (1) a depth of 3,800 feet or deeper; and (2) penetration of the Middle Devonian Onondaga Group or its equivalent. The Oil and Gas Conservation Law provides for spacing of oil and gas wells, unitization, and protection of the rights of oil and gas owners. Act 38 relates to underground gas storage and to the rights and protection of persons living within the boundaries of underground gas storage areas. The work of the Division of Oil and Gas Regulation during 1981 is summarized in Figures 29 and 30.

ACTIVITIES OF THE NATURAL GAS POLICY ACT (NGPA) SECTION

The Natural Gas Policy Act (NGPA) is part of the national energy program signed into law in 1978. The act provides for the gradual deregulation of natural gas prices by 1985. The Oil and Gas Regulation Division, Bureau of Topographic and Geologic Survey, Pennsylvania Department of Environmental Resources, was empowered to review well-classification applications for NGPA as required by the Federal Energy Regulatory Commission (FERC). The staff of the NGPA section of the division processes applications for NGPA well classifications by examining the data each applicant submits in order to justify the category for which he seeks a determination. The staff is involved with making determinations of four basic well categories: (1) Section 102, New, Natural Gas; (2) Section 103, New, Onshore Production Wells; (3) Section 107, High-Cost Gas; and (4) Section 108, Stripper Gas. Three of these sections have subsections, each with its own price ceiling set by federal law. The staff reviews each application to determine whether the data submitted are sufficient to meet the NGPA requirements for the preferred classification.

The applicant must submit a $30.00 filing fee for each well-determination application to cover the state cost of administering the program. In addition

Figure 29. Summary of activities of the Oil and Gas Regulation Division, 1956-1981

	Cumulative from 1956-1969	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*Grand total 1956-1981*
1. Drilling permits issued in coal areas	4,394	322	342	469	694	648	916	782	1,166	1,429	1,332	1,359	1,703	15,556
2. Drilling permits issued in coal areas, Act 359	224	16	10	16	11	15	26	12	27	21	42	23	26	469
3. Total wells in coal areas (items 1 and 2)	4,618	338	352	485	705	663	942	794	1,193	1,450	1,374	1,382	1,729	16,025
4. Drilling permits issued in noncoal areas	1,103	914	956	1,247	1,522	1,364	1,042	1,381	1,510	1,806	2,348	5,079	5,933	26,205
5. Drilling permits issued in noncoal areas, Act 359	214	9	12	37	61	34	23	15	51	93	182	482	946	2,159
6. Total permits issued (items 3, 4, and 5)	5,935	1,261	1,320	1,769	2,288	2,061	2,007	2,190	2,754	3,349	3,904	6,943	8,608	44,389
7. Reported wells in noncoal areas — file numbers issued	8,202*	27*	2*	10*	0	0	0	0	0	0	0	0	0	8,241*
8. Total wells in noncoal areas (items 4, 5, and 7)	9,519	950	970	1,294	1,583	1,398	1,065	1,396	1,561	1,899	2,530	5,561	6,879	36,605
9. Total wells in coal and noncoal areas (items 6 and 7)	14,137	1,288	1,322	1,779	2,288	2,061	2,007	2,190	2,754	3,346	3,904	6,943	8,608	52,630
10. Total drilling permits issued, Act 359 (items 2 and 5)	438	25	22	53	72	49	49	27	78	114	224	505	972	2,628
11. Drilling cancelled permits and noncoal file numbers	1,108	244	236	169	327	597	383	667	469	412	467	616	859	6,554
12. Plugging numbers issued	6,374	1,721	1,383	1,860	1,681	1,511	1,630	1,959	1,300	2,057	1,225	1,069	1,228	24,998
13. Plugging numbers cancelled	318	119	116	83	180	112	119	92	71	60	66	25	57	1,418
14. Wells reported plugged and abandoned	5,142	992	1,573	1,317	1,410	1,089	1,284	1,493	1,144	991	1,307	959	802	19,503
15. Pillar permits issued	2,131	164	105	142	96	96	94	104	125	83	150	141	163	3,594
16. Pillar permits cancelled	18	0	0	1	0	1	0	2	0	0	0	0	0	22

Act 359 of 1961 — Oil and Gas Conservation Law, approved July 25, 1961. Effective date September 25, 1961.

*Prior to September 30, 1968, permits were not required for wells in noncoal areas, except those wells coming within purview of Act 359 of 1961.

Act 265, approved July 31, 1968, effective September 30, 1968 — requires permits to be issued for all wells.

Figure 30. Summary of activities of the Oil and Gas Regulation Division by county, 1981

County	Permits issued coal areas	Permits issued noncoal areas	Drilling cancelled	Plugging numbers issued	Plugging cancelled	Wells reported plugged and abandoned	Pillar permits issued	DRILLING PERMITS ISSUED Act 359 of 1961 coal areas	noncoal areas
Allegheny	6	13	5	10	0	5	21	0	0
Armstrong	75	15	43	16	4	2	11	0	0
Beaver	0	9	3	1	1	0	0	0	2
Butler	22	8	8	19	0	3	20	0	0
Cambria	73	0	6	1	0	1	0	2	0
Cameron	0	0	0	0	0	1	0	0	0
Centre	2	0	0	0	0	0	0	2	0
Clarion	27	95	13	11	0	6	0	1	0
Clearfield	239	1	13	4	0	3	0	1	1
Clinton	0	18	4	0	0	1	0	0	1
Crawford	0	570	51	10	0	1	0	0	367
Elk	0	158	14	38	1	53	0	0	0
Erie	0	523	77	10	0	6	0	0	295
Fayette	28	0	5	3	0	7	0	0	0
Forest	0	772	8	55	1	38	0	0	0
Greene	23	0	6	14	0	6	46	0	0
Indiana	739	0	123	24	0	7	27	3	0
Jefferson	174	49	48	20	2	11	2	0	0
Lawrence	0	1	0	0	0	0	0	0	0
Luzerne	0	1	1	0	0	0	0	0	0
Lycoming	0	0	0	2	0	0	0	0	0
McKean	1	568	36	682	47	465	0	1	5
Mercer	9	178	23	3	0	0	0	9	153
Potter	0	53	1	2	0	5	0	0	1
Somerset	4	1	4	1	0	2	0	3	1
Tioga	0	25	3	3	0	2	0	0	2
Venango	6	2,060	228	229	0	133	0	3	5
Warren	0	1,757	77	35	0	28	0	0	113
Washington	51	3	5	11	0	5	35	0	0
Westmoreland	250	1	54	24	1	11	1	1	0
TOTAL	1,729	6,879	859	1,228	57	802	163	26	946

he must complete and submit Pennsylvania forms and a FERC form, along with geologic, engineering, and production data to support the requested classification. A backlog of approximately 800 applications was on file at the end of 1981, and more applications continue to be filed every day.

Figure 31 lists the actions taken by the staff in making well-classification determinations for the year 1981.

Figure 31. 1981 Well-classification determinations made under the federal Natural Gas Policy Act

No. of applications	*Category*	*Approved*	*Disapproved*
461	102	450	11
1,300	103	1,254	46
593	107	588	5
1,604	108	1,594	10

SUMMARIZED RECORDS OF REPORTED DEEP WELLS* IN 1981

The information in Figure 32 has been compiled mainly from drillers' logs, location plats, and geophysical logs received from the Oil and Gas Regulation Division. Other sources are Petroleum Information Corporation (PI) and personal communications with oil and gas operators. Well records are filed with the Oil and Gas Regulation Division by permit numbers. The Oil and Gas Geology Division assigns a file number which appears on the Survey's published and open-file maps.

A single asterisk appearing on a record indicates that all formation tops and total depths were picked from a geophysical log. A record without an asterisk means that the formation tops and total depths are from the driller's log. A double asterisk precedes the 7-1/2-minute quadrangle name and location. The tables are listed alphabetically by county and numerically by permit number.

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*Wells that penetrate rocks of Middle Devonian or older age.

Figure 32. Summarized records of reported deep wells in 1981 that penetrated rocks of Middle Devonian or older age

COUNTY Permit Number	Allegheny 20980	Cambria 20095	Cameron 20067	Clarion 20796	Clarion 20864	Clinton 20197-R	Crawford 20556	Crawford 20558	Crawford 20562	Crawford 20563
NAME OF WELL	Combustion Engineering #01	Cambria Mining Gas Unit #1	Commonwealth of PA #236	Catherine Conner #1	Donald H. Minich #2	General Refractories #1	J. J. & E. D. Klimko #3	Serbian Eastern Orthodox #1	Saint Sava Home #4	Earl E. Hamilton #2
OPERATOR	Combustion Engineering, Inc.	Amoco Production Company	Consolidated Gas Supply #WN-1823	Floyd Gearhart & Stanley Odell	Floyd Gearhart & Stanley Odell	Amoco Production Company	Center Bar Gas Company	Center Bar Gas Company	Center Bar Gas Company	Center Bar Gas Company
TOWNSHIP	Forward	Adams	Gibson	Toby	Licking	Beech Creek	Spring	Spring	Spring	Spring
QUADRANGLE & MAP NUMBER	Brownsville B 3 **Monongahela F	Bedford A 6 **Ogletown B	Driftwood E 125 **First Fork G	Foxburg H 4 **Rimersburg O	Foxburg F 5 **Knox 1	Howard D 4 **Howard NW H	Girard H 575 Beaver Center F	Girard H 576 Beaver Center F	Girard H 577 Conneautville D	Girard H 574 Beaver Center
LATITUDE	4,000 ft. S 40°12'30"	1,350 ft. S 40 15'00"	4,850 ft. S 41°25'00"	11,650 ft. S 41°05'00"	4,250 ft. S 41°10'00"	13,675 ft. S 41 10'00"	9,150 ft. S 41°50'00"	6,450 ft. S 41°50'00"	6,150 ft. S 41°50'00"	11,500 ft. S 41°50'00"
LONGITUDE	7,050 ft. W 79°52'30"	7,750 ft. W 78°40'00"	8,375 ft. W 78°05'00"	6,350 ft. W 79 35'00"	8,250 ft. W 79°30'00"	5,050 ft. W 77 40'00"	4,800 ft. W 80 22'30"	5,500 ft. W 80°22'20"	11,000 ft. W 80°20'00"	4,850 ft. W 80°22'30"
DATE COMPLETED	3-25-79	7-1-81	2-18-81	12-10-79	10-2-80	8-27-80	11-15-78	11-27-78	12-18-78	11-19-78
ELEVATION	759 GR	2827 GR	2137 GR	1408 KB	1192 KB	1338 GR	975 GR	905 GR	1030 GR	990 GR
TULLY	7075-7125 Gas @7330		*6321-	*5540-	*5053-		2008-	1915-	2062-	*2028-
ONONDAGA LIMESTONE	7495-	8880-	7028	5850-	5350		2185-	2086-	2236-	2202-
ONONDAGA CHERT		8942-								
ORISKANY		8990- Gas @9000-9014	7054- Gas @7056-7080	5884-	Absent		2389-	2334-	2416-	Bois Blanc 2420- Gas @2432-2444
HELDERBERG				5906-	5423-					
KEYSER-BASS ISLAND				6024-	5570-		2446-	2344-	2464-	2444-
SALINA					5617-		2588-	2407-	2624-	2514-
GUELPH-LOCKPORT							3094-	2974-	3121-	
BLACK WATER										
CLINTON							3348-	3243-	3376-	
IRONDEQUOIT								3310-		
MEDINA WHIRLPOOL							3464- Gas @3532-3576	3342- Gas @3370-3430	3491- Gas @3562-3670	
QUEENSTON							3646-	3527-	3671-	
TOTAL DEPTH	7512	9205	7167	6095	5805	11679	3718	3598	3748	2424
DEEPEST FORMATION REACHED	Onondaga	Oriskany	Oriskany	Bass Island	Salina Group	Tuscarora	Queenston	Queenston	Queenston	Oriskany
RESULT	10 Mcf Nat. 280 Mcf AF Producing from Elk Burket, Marcellus Monongahela pool discovery Forward field	2,050 Mcf Nat. 2,300 Mcf AF 3,966 psi/21 days New field discovery Pot Ridge field	335 Mcf AF 2,960 psi/7 days New pool discovery Punxsutawney- Driftwood field Grove Hill pool	313 Mcf AF 1,670 psi/18 hrs Dev. shale gas Dry deeper pool discovery Blue Goose pool Fiddler Run field	370 Mcf AF 1,275 psi/48 hrs Dev. shale gas Dry deeper pool discovery Minich pool Canoe Ripple fiel	Well originally drilled to 90' an plugged. Re-entere deepened & plugge Dry new field wildcat	371 Mcf AF 1,200 psi/72 hrs development Springboro pool Conneaut field	496 Mcf AF 1,150 psi/? extension Springboro pool Conneaut field	333 Mcf AF 840 psi/72 hrs. development Springboro pool Conneaut field	481 Mcf AF 1,100 psi/72 hrs discovery Center Bar pool Conneaut field

COUNTY Permit Number	Crawford 20563-D	Crawford 20571	Crawford 20621	Crawford 20626	Crawford 20636	Crawford 20637	Crawford 20638	Crawford 20639	Crawford 20665	Crawford 20696
NAME OF WELL	Earl E. Hamilton #2	Serbian Eastern Orthodox #1	Oillinger #2	Wilbur F. Wheeler #2	William R. Lutz #1	James Redden #1	Wilbur N. Wheeler #2	Karl M. Martin #1	O. Raymond Creacraft #1	W. L. Dunn Construction #1
OPERATOR	Center Bar Gas Company	Center Bar Gas Company	Cardinal Oil Company #32	Cardinal Oil Company #23	Cardinal Oil Company #22	Cardinal Oil Company #24	Cardinal Oil Company #25	Cardinal Oil Company #26	Wainoco Oil & Gas Company #W-44	Cabot Oil & Gas Corporation
TOWNSHIP	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Athens	East Fairfield
QUADRANGLE & MAP NUMBER	Girard H 574 **Beaver Center F	Girard H 578 **Beaver Center F	Girard E 579 **Conneautville E	Girard I 580 **Conneautville E	Girard I 581 **Conneautville E	Girard I 582 **Conneautville E	Girard I 583 **Conneautville E	Girard I 584 **Conneautville E	Townville 8 42 **Centerville A	Meadville I 100 **Cochranton H
LATITUDE	11,500 ft. S 41 50'00"	6,700 ft. S 41°50'00"	2,180 ft. S 41 50'00"	6,340 ft. S 41 50'00"	6,360 ft. S 41 50'00"	3,020 ft. S 41 50'00"	5,700 ft. S 41 50'00"	7,470 ft. S 41°50'00"	7,050 ft. S 41°45'00"	3,800 ft. S 41°32'30"
LONGITUDE	4,850 ft. W 80°22'30"	2,400 ft. W 80°22'30"	4,060 ft. W 80°17'30"	3,220 ft. W 80°17'30"	300 ft. W 80°17'30"	5,160 ft. W 80°17'30"	6,940 ft. W 80°17'30"	6,910 ft. W 80°17'30"	2,550 ft. W 79°50'00"	7,600 ft. W 80°02'30"
DATE COMPLETED	11-19-78	12-8-78	9-2-80	9-26-80	8-25-80	7-29-80	9-13-80	8-12-80	2-29-80	9-13-80
ELEVATION	990 GR	895 GR	1130 GR	1142 GR	1219 GR	1153 GR	1189 GR	1176 GR	1391 KB	1112 KB
TULLY	*2026-	*1932-	*2186-	2213-	*2314-	*2254-2299	*2280-	*2266-	*3128-	3110-
ONONDAGA LIMESTONE	2200-	2104-	2376-	2398-	2500-	2440-2612	2464-	2449-	3360-	3316-
ONONDAGA CHERT										
ORISKANY	2432-	2350-	Absent	2600-	2674-	Absent	2676-	2648-	3529-	3489-
HELDERBERG								2658-		3511-
KEYSER-BASS ISLAND	2444-	2370-	2594-	2725-	2830-	2652-	2810-	2672-	3532-	
SALINA	2514-	2416-	2666-	2790-	2800-	2722-	2944-	2727-	3602-	3814-
GUELPH-LOCKPORT BLACK WATER	3046-	2991-	3164-		3356-	3291-		3312-	4177-	4250-
CLINTON	3392-	3246-	3492-	3506-	3630-	3570-	3566-	3598-	4513-	4620-
IRONDEQUOIT	3460-	3326-	3561-		3700-	3628-	*3658-	3647-	4573-	4682-
MEDINA	3492- Gas @3543-3672	3358- Gas @3543-3672	3592- Gas @3613-3770	3642- Gas @3682-3817	3736- Gas @3753-3913	3660-3834 Gas @3687-3831	3692- Gas @3710-3771	3682- Gas @3703-3858	4598- Gas @4662-4743	4737- Gas @4737-4851
WHIRLPOOL		3530-	3765-			3828-	3866-	3854-	4790-	4915-
QUEENSTON	3676-	3539-	3772-	3822-	3912-	3834-	3873-	3861-	4804-	4930-
TOTAL DEPTH	3781	3598	3837	3860	3942	3868	3911	3946	4815	4955
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	488 Mcf AF 1,100 psi/72 hrs. deepened well extension Springboro pool Conneaut field	481 Mcf AF 1,100 psi/72 hrs. development Springboro pool Conneaut field	625 Mcf AF 1,025 psi/9 days development Lundys Lane pool Conneaut field	750 Mcf AF 1,100 psi/3 days development Indian Springs pool Conneaut field	925 Mcf AF 1,100 psi/4 days development Indian Springs pool Conneaut field	625 Mcf AF 850 psi/5 days extension Lundys Lane pool Conneaut field	600 Mcf AF 850 psi/8 days development Lundys Lane pool Conneaut field	780 Mcf AF 1,075 psi/3 days extension Lundys Lane pool Conneaut field	1,343 Mcf AF RP not given development Athens field	1,205 Mcf AF 1,470 psi/72 hrs. development Shaws Corners pool Kantz Corners field

Figure 32. (Continued)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NAME [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOWNSHIP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
QUADRANGLE & MAP NUMBER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LATITUDE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LONGITUDE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DATE COMPLETED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ELEVATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TULLY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ONONDAGA - LIMESTONE CHERT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ORISKANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HELDERBERG	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
KEYSER-BASS ISLAND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SALINA	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GUELPH-LOCKPORT + BLACK WATER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CLINTON	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEDINA	[illegible] Gas @ 3506-[illegible]	[illegible] Gas @ [illegible]-495	466[illegible]- Gas @ 47[illegible]-479	[illegible] Gas @ [illegible]	[illegible] Gas @ 4464-471[illegible]	[illegible] Gas @ 44[illegible]56-4[illegible]	[illegible] Gas @ [illegible]-4154	[illegible] Gas @ [illegible]	[illegible] Gas @ 44[illegible]-44[illegible]	[illegible] Gas @ 44[illegible]-4424
WHIRLPOOL	365[illegible]-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4365-	44[illegible]-	44[illegible]
QUEENSTON	[illegible]	[illegible]	456[illegible]-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44[illegible]	44[illegible]
TOTAL DEPTH	[illegible]	[illegible]	490[illegible]	5194	[illegible]	[illegible]	[illegible]	44[illegible]	[illegible]	[illegible]
DEEPEST FORMATION REACHED	Whirlpool	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	[illegible] Mcf AF [illegible] psi, 24 hrs development Lundys Lane pool Conneaut field	[illegible] Mcf AF 1,4[illegible] psi, 72 hrs development Shaws Corners pool Kantz Corners field	[illegible] Mcf AF [illegible]35 psi, 72 hr development Shaws Corners pool Kantz Corners field	793 Mcf AF RP not given extension Mt Pleasant Road pool Kantz Corners field	[illegible] Mcf AF [illegible] psi, 72 hr extension Mt Pleasant Road pool Kantz Corners field	42 Mcf Nat 735 Mcf AF [illegible]41 psi, 7 days development Rockdale field	45 Mcf Nat [illegible] Mcf AF [illegible]28 psi, 7 day extension Rockdale field	[illegible] Mcf AF [illegible] psi, 7 day development Rockdale field	15 Mcf AF 1,[illegible] psi, 7 days development Rockdale field	59[illegible] Mcf Nat 4[illegible] Mcf AF 1,33[illegible] psi, 7 day development Rockdale field

COUNTY Permit Number		Crawford 20750	Crawford 20751	Crawford 20752	Crawford 20753	Crawford 20754	Crawford 20756	Crawford 20757	Crawford 20758	Crawford 20759	Crawford 20760
NAME OF WELL		George Marzka et ux #2	Donald Blakeslee et ux #1	Stanley L. Orr et ux #2	H. Wilson Watson, et ux #2	H. Wilson Watson, et ux #3	Andrew Bachleda #1	Frank & Helen Bitenc #3	F. & H. Bitenc #4	F. & H. Bitenc #5	F. & H. Bitenc #6
OPERATOR		Meridian Exploration Corp. #523	Meridian Exploration Corp. #524	Meridian Exploration Corp. #525	Meridian Exploration Corp. #526	Meridian Exploration Corp. #527	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP		Rockdale	Rockdale	Rockdale	Rockdale	Rockdale	Greenwood	Greenwood	Greenwood	Greenwood	Greenwood
QUADRANGLE & MAP NUMBER		Union City G 103 **Millers Station	Union City D 104 **Millers Station	Union City D 105 **Millers Station	Union City G 106 **Millers Station	Union City G 107 **Millers Station	Meadville G 73 **Geneva H	Meadville G 75 **Geneva G	Meadville G 83 **Geneva G	Meadville G 76 **Geneva G	Meadville G 84 **Geneva H
LATITUDE		6,650 ft. S 41°50'00"	13,850 ft. S 41°52'30"	11,500 ft. S 41°52'30"	5,250 ft. S 41°50'00"	6,000 ft. S 41°50'00"	3,050 ft. S 41°32'30"	11,400 ft. S 41°32'30"	9,050 ft. S 41°32'30"	13,600 ft. S 41°32'30"	14,100 ft. S 41°32'30"
LONGITUDE		9,400 ft. W 79°55'00"	6,500 ft. W 79°55'00"	7,550 ft. W 79°55'00"	3,350 ft. W 79°57'30"	250 ft. E 79°57'30"	1,150 ft. W 80°10'00"	50 ft. W 80°12'30"	1,600 ft. W 80°12'30"	1,950 ft. W 80°12'30"	10,600 ft. W 80°10'00"
DATE COMPLETED		10-12-80	8-25-80	8-18-80	10-3-80	10-26-80	9-4-80	10-14-80	9-23-80	10-17-80	10-25-80
ELEVATION		1268 KB	1518 KB	1518 KB	1318 KB	1273 KB	1112 KB	1347 KB	1332 KB	1322 KB	1310 GR
TULLY			*2850-	*2933-	*2662-	*2628-	*3009-	*3263-	*3233-	*3222-	*3248-
ONONDAGA	LIMESTONE		3076-	3163-	2874-	2847-	3184-	3429-	3395-	3390-	3413-
	CHERT										
ORISKANY			Absent	3353-	Absent	Absent	3372-	3616-	3581-	3576-	3597-
HELDERBERG			3266-	3369-	3056-	3034-	3388-	3629-	3591-	3590-	3614-
KEYSER-BASS ISLAND			3294-	3385-	3080-	3050-	3424-	3673-		3631-	3641-
SALINA			3328-	3411-	3118-	3094-	3474-	3723-	3890-	3685-	3707-
GUELPH-LOCKPORT	BLACK WATER	*3648-	3842-	3937-	3669-	3636-	4122-	4377-	4334-	4348-	4368-
CLINTON		3980-	4189-	4275-	4010-	3944-	4482-	4747-	4700-	4716-	4741-
	IRONDEQUOIT	4036-	4246-	4330-	4067-	4026-	4539-	4802-	4770-	4772-	4798-
MEDINA	WHIRLPOOL	4061- Gas @4133-4250 4240-	4270- Gas @4318-4456 4446-	4353- Gas @4366-4538 4530-	4092- Gas @4152-4278 4271-	4050- Gas @4096-4238 4228-	4572- Gas @4609-4783 4771-	4837- Gas @4919-5050 5040-	4800- Gas @4856-5011 5000-	4806- Gas @4863-5024 5008-	4832- Gas @4856-5048 5037-
QUEENSTON		4253-	4458-	4542-	4283-	4241-	4785-	5055-	5013-	5024-	5050-
TOTAL DEPTH		4334	4553	4621	4375	4301	4983	5153	5112	5123	5153
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		35 Mcf Nat. 360 Mcf AF 1,220 psi/7 days extension Rockdale field	60 Mcf Nat. 480 Mcf AF 1,280 psi/7 days development Rockdale field	120 Mcf AF 1,140 psi/7 days extension Rockdale field	20 Mcf Nat 419 Mcf AF 1,320 psi/7 days development Rockdale field	37 Mcf Nat. 400 Mcf AF 1,245 psi/7 days development Rockdale field	600 Mcf AF 1,350 psi/72 hrs. extension Kantz Corners field	1,215 Mcf AF 1,300 psi/72 hrs. extension Rock Creek pool Geneva field	179 Mcf Nat. 1,210 Mcf AF 1,250 psi/72 hrs. extension Rock Creek pool Geneva field	1,400 Mcf AF 1,320 psi/72 hrs. extension Rock Creek pool Geneva field	215 Mcf AF 1,350 psi/72 hrs. extension Rock Creek pool Geneva field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 20762	Crawford 20769	Crawford 20786	Crawford 20788	Crawford 20789	Crawford 20798	Crawford 20799	Crawford 20805	Crawford 20806	Crawford 20807
NAME OF WELL	W. L. Dunn Construction #4	F. & H. Bitenc #2	Robert L. Dallas #1	B. & P. Wagner #1	J. Moreland #1	Clarence & Edna Guianen #1	David & Felicidad Guianen #1	J. & C. Urbanick #1-56	Albert B. Gallaher #1	James L. Heald #1-57
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Wainoco Oil & Gas Company #W-80	Cabot Oil & Gas Corporation	Cardinal Oil Company #40	Northwest Natural Gas Company	Northwest Natural Gas Company	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation
TOWNSHIP	East Fairfield	Greenwood	Rome	East Fairfield	Cussewago	Spring	Spring	Summerhill	Summerhill	Summerhill
QUADRANGLE & MAP NUMBER	Meadville 1 96 **Cochranton H	Meadville G 78 **Geneva H	Corry H 98 **Spartansburg	Meadville 1 85 **Cochranton E	Cambridge Spgs 110 **Edinboro South	Girard H 530 **Conneautville 0	Girard 655 **Conneautville 0	Linesville A 77 **Harmonsburg	Linesville C 74 **Harmonsburg E	Linesville C 75 **Harmonsburg C
LATITUDE	4,000 ft. S 41 32'30"	11,450 ft. S 41 32'30"	13,250 ft. S 41 47'30"	5,600 ft. S 41 35'00"	4,760 ft. S 41 50'00"	3,350 ft. S 41 50'00"	4,200 ft. S 41°50'00"	9,550 ft. S 41°45'00"	3,300 ft. S 41 42'30"	7,700 ft. S 41 45'00"
LONGITUDE	4,850 ft. W 80 02'30"	8,550 ft. W 80 10'00"	5,850 ft. W 79 40'00"	11,000 ft. W 80 02'30"	10,340 ft. W 80°12'30"	2,000 ft. W 80 20'00"	600 ft. W 80°20'00"	10,950 ft. W 80 20'00"	10,400 ft. W 80°17'30"	6,900 ft. W 80 15'00"
DATE COMPLETED	9-26-80	10-1-80	11-1-80	9-11-80	8-29-80	9-19-80	10-24-80	9-30-80	9-24-80	10-20-80
ELEVATION	1120 GR	1352 KB	1680 GR	1490 GR	1152 GR	1170 GR	1180 GR	1127 GR	1166 GR	1345 GR
TULLY	*3202-	*3280-	3574-	*3406-	2208-	2218-	2244-	*2349-	*2480-	*2632-
ONONDAGA LIMESTONE	3411-	3442-	3823-	3600-	2401-	2399-	2424-	2510-	2642-	2810-
ONONDAGA CHERT										
ORISKANY	3579-	3628-		3777-	2611-			2708-	2837-	3003-
HELDERBERG	3603-	3644-		3800-				2716-		3010-
KEYSER-BASS ISLAND	3632-	3681-			2619-	2639-	2640-	2744-	2843-	3040-
SALINA	3697-	3734-	4250-	4100-	2686-	2706-	2708-	2790-	2918-	3082-
GUELPH-LOCKPORT	4342-	4399-		4464-	3218-	3260-	3290-	3400-	3534-	3755-
BLACK WATER										
CLINTON	4705-	4755-		4838-	3540-		3556-	3691-	3880-	4014-
IRONDEQUOIT	4767-	4812-	4993-	4894-	3615-	3611-		3793-	3934-	4068-
MEDINA WHIRLPOOL	4800- Gas @4868-4951 5000-	4847- Gas @4908-5065 5050-	5043- Gas @5082-5219 5202-	4926- Gas @4985-5142 5126-	3647- Gas @3688-3822 3818-	3638- Gas @3667-3730 3818-	3665- Gas @3709-3765	3821- Gas @3852-4011 4006-	3962- Gas @4012-4158 4150-	4096- Gas @4132-4284 4280-
QUEENSTON	5010-	5066-	5224-	5143-	3826-	3824-		4015-	4160-	4287-
TOTAL DEPTH	5114	5176	5341	5228	3908	3831	3871	4096	4216	4360
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	377 Mcf Nat. 2,750 Mcf AF 1,490 psi/72 hrs. extension Kantz Corners field	1,210 Mcf AF 1,275 psi/72 hrs. development Rock Creek pool Geneva	5,067 Mcf AF 1,400 psi/72 hrs. extension Athens field	4,930 Mcf AF 1,425 psi/72 hrs. extension Shaws Corners pool Kantz Corners	725 Mcf AF 1,000 psi/5 days extension Indian Springs pool Conneaut	1,100 Mcf AF 1,150 psi/2 days development Lundys Lane pool Conneaut	150 Mcf AF 1,059 psi/2 days development Lundys Lane pool Conneaut	317 Mcf AF 1,150 psi/38 hrs. extension Indian Springs pool Conneaut	346 Mcf AF 1,150 psi/12 hrs. extension Indian Springs pool Conneaut	330 Mcf AF 950 psi/14 hrs. extension Kastle pool Conneaut

COUNTY Permit Number		Crawford 20808	Crawford 20809	Crawford 20811	Crawford 20812	Crawford 20813	Crawford 20814	Crawford 20816	Crawford 20817	Crawford 20818	Crawford 20819
NAME OF WELL		Robert O. Carlson #1-58	Nick M. & Virginia Gessner #1	Robert & Dora Loper #1	Andrew J. & Clara Coblentz #1	Edward Bobula #1	Walter & Patricia Ulan #1	Greene/Greenfield Cook #1	Rudolph & Lena Lenhardt #1	Joseph & Barbara Neidermeyer #1	Arthur Hickling #1
OPERATOR		Mitchell Energy Corporation	Northwest Natural Gas Company	Mitchell Energy Corporation	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company
TOWNSHIP		Summit	Spring	Summerhill	Spring	Spring	Spring	Spring	Spring	Spring	Spring
QUADRANGLE & MAP NUMBER		Linesville C 76 **Harmonsburg F	Girard I 531 **Conneautville E	Linesville B 73 **Harmonsburg A	Girard H 586 **Conneautville D	Girard 656 **Conneautville	Girard F 532 **Conneautville B	Girard H 533 **Conneautville D	Girard I 587 **Conneautville E	Girard I 588 **Conneautville E	Girard H 534 **Conneautville D
LATITUDE		8,150 ft. S 41°42'30"	3,400 ft. S 41°50'00"	13,250 ft. S 41 45'00"	5,220 ft. S 40 50'00"	7,500 ft. S 41°50'00"	9,350 ft. S 41°52'30"	6,100 ft. S 41°50'00"	9,080 ft. S 41°50'00"	9,130 ft. S 41°50'00"	7,150 ft. S 41°50'00"
LONGITUDE		10,750 ft. W 80°15'00"	10,650 ft. W 80 17'30"	2,850 ft. W 80 20'00"	1,940 ft. W 80 20'00"	3,050 ft. W 80°20'00"	7,050 ft. W 80°17'30"	1,050 ft. W 80°20'00"	9,100 ft. W 80°17'30"	10,250 ft. W 80 17'30"	1,600 ft. W 80°20'00"
DATE COMPLETED		2-23-81	8-26-80	9-17-80	9-27-80	10-29-80	9-20-80	9-30-80	9-24-80	9-23-80	9-26-80
ELEVATION		1319 GR	1190 GR	1052 KB	1190 GR	1170 GR	1132 GR	1195 GR	1180 GR	1200 GR	1210 GR
TULLY		*2704-	2242-	*2322-	2260-	2232-	2123-	2268-	2286-	2316-	2288-
ONONDAGA	LIMESTONE	2871-	2419-	2486-	2439-	2408-	2316-	2446-	2465-	2495-	2464-
	CHERT										
ORISKANY		3073-		2684-							
HELDERBERG		3079-		2714-							
KEYSER-BASS ISLAND SALINA		3106- 3152-	2650- 2720-	2730- 2757-	2730- 2810-	2733- 2808-	2578- 2637-	2662- 2733-	2738- 2796-	2708- 2776-	2694- 2752-
GUELPH-LOCKPORT BLACK WATER		3836-	3287-	3359-	3309-	3288-	3180-	3312-	3337-	3250-	3334-
CLINTON IRONDEQUOIT		4100- 4154-	3542- 3630-	3700- 3750-	3564- 3649-	3534-	3454- 3536-	3570- 3652-	3581- 3677-	3607- 3710-	3592- 3673-
MEDINA WHIRLPOOL		4184- Gas @4225-4374 4369-	3656- Gas @3689-3748 3843-	3781- Gas @3822-3976 3967-	3681- Gas @3712-3776	3618- Gas @3698-3735	3562- Gas @3586-3652 3720-	3680- Gas @3711-3778 3850-	3709- Gas @3754-3820 3882-	3745- Gas @3793-3835	3702- Gas @3733-3775 3884-
QUEENSTON		4376-	3848-	3978-			3725-	3854-	3891-		3888-
TOTAL DEPTH		4457	3902	4027	3842	3847	3738	3821	3917	3846	3899
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		307 Mcf AF 1,100 psi/144 hrs. New pool discovery Carlson pool Conneaut field	1,200 Mcf AF 1,165 psi/2 days development Lundys Lane pool Conneaut field	270 Mcf AF 1,250 psi/16 hrs. extension Indian Springs pool Conneaut field	500 Mcf AF 1,020 psi/24 hrs. development Lundys Lane pool Conneaut field	850 Mcf AF 1,010 psi/2 days development Lundys Lane pool Conneaut field	1,500 Mcf AF 1,125 psi/2 days development Lundys Lane pool Conneaut field	1,100 Mcf AF 1,150 psi/2 days development Lundys Lane pool Conneaut field	1,000 Mcf AF 1,090 psi/24 hrs. development Lundys Lane pool Conneaut field	1,000 Mucf AF 1,090 psi/24 hrs. extension Lundys Lane pool Conneaut field	1,100 Mcf AF 1,150 psi/2 days extension Lundys Lane pool Conneaut field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 20822	Crawford 20823	Crawford 20827	Crawford 20828	Crawford 20829	Crawford 20830	Crawford 20831	Crawford 20832	Crawford 20834	Crawford 20837
NAME OF WELL	Anthony & Irene Izbicki #1	Ed Ertman #1	Kebert Developers #A-1	Marilyn B. Rainey #1	David Holler #1	Ila Smith #1	Donald L. Holsten #2	Donald L. Holsten #1	John Rynd #1	Gertrude Patterson #1
OPERATOR	Wainoco Oil & Gas Company #W-85	Cardinal Oil Company #43	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	Bloomfield	Spring	Greenwood	Fairfield	Wayne	Randolph	Fairfield	Fairfield	Wayne	East Fairfield
QUADRANGLE & MAP NUMBER	Union City I 153 **Lake Canadohta F	Girard I 589 **Conneautville F	Meadville G 79 **Geneva H	Stoneboro 8 25 **New Lebanon A	Townville G 43 **Sugar Lake 0	Townville 0 44 **Sugar Lake 8	Meadville H 80 **Cochranton G	Meadville G 81 **Cochranton G	Meadville I 86 **Cochranton I	Meadville H 97 **Cochranton G
LATITUDE	4,800 ft. S 41 50'00"	10,550 ft S 41 50'00"	2,000 ft. S 41 32'30"	700 ft. S 41 30'00"	14,050 ft. S 41 35'00"	10,200 ft. S 41 37'30"	14,250 ft. S 41 32'30"	14,550 ft. S 41 32'30"	14,050 ft. S 41 32'30"	1,300 ft. S 41 32'30"
LONGITUDE	6,000 ft. W 79 45'00"	5,580 ft W 80 15'00"	10,000 ft W 80 10'00"	2,200 ft. W 80 05'00"	8,250 ft. W 79 57'30"	9,200 ft. W 79 55'00"	7,250 ft. W 80 05'00"	4,400 ft. W 80 05'00"	6,000 ft. W 80 00'00"	700 ft. W 80 05'00"
DATE COMPLETED	10-17-80	9-31-80	10-8-80	9-30-80	11-4-80	10-31-80	11-9-80	11-18-80	11-16-80	10-11-80
ELEVATION	1570 GR	1305 GR	1261 KB	1456 KB	1341 KB	1501 KB	1436 KB	1442 KB	1185 GR	1090 GR
TULLY	*3140-	2434-	*3138-	*3529-	*3397-	*3484-	3462-	*3478-	*3315-	*3087-
ONONDAGA LIMESTONE CHERT	3382-	2617-	3303-	3724-	3620-	3655-	3651-	3667-	3534-	3290-
ORISKANY	Absent	2818-	3502-	3894-	3781-	3818-	3824-	3836-	3686-	3465-
HELDERBERG			3512-	3915-	3801-	3834-	3843-	3860	3707-	3483-
KEYSER-BASS ISLAND SALINA	3556- 3612-	*2823- 2888-	3549- 3602-	3957- 4016-	3848- 3904-	3869- 3923-	3886- 3938-	3902- 3963-	 4034-	3504- 3575-
GUELPH-LOCKPORT BLACK WATER	4136-	3510-	4236-	4693-	4534-	4562-	4614-	4632-	4473-	4200-
CLINTON IRONDEQUOIT	4482- 4544-	3766- 3818-	4600- 4663-	5053- 5102-	4881- 4953-	4921- 4982-	4977- 5036-	4989- 5050-	4836- 4902-	4569- 4629-
MEDINA WHIRLPOOL	4588- Gas @4625-4765 4748-	3852- Gas @3877-4018 4025-	4695- Gas @4763-4905 4897-	5154- Gas @5222-5370 5360-	4987- Gas @5059-5128 5185-	5010- Gas @5078-5116 5205-	5072- Gas @5144-5290 5275-	5086- Gas @5150-5303 5296-	4938- Gas @4975-5147 5140-	4663- Gas @4690-4800 4862-
QUEENSTON	4768-	4035-	4911-	5375-	5196-	5217-	5291-	5305-	5152-	4880-
TOTAL DEPTH	4901	4044-	4998	5466	5316	5331	5395	5432	5286	4980
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	127 Mcf AF RP not given extension Dutch Hill pool Athens field	700 Mcf AF 1,075 psi/5 days extension Indian Springs pool Conneaut field	984 Mcf AF 1,050 psi/72 hrs extension Greenwood pool Geneva field	2,210 Mcf AF 1,300 psi/72 hrs. development Kantz Corners field	698 Mcf AF 1,300 psi/72 hrs. New field discovery Deckard pool Cochranton field	850 Mcf AF 1,200 psi/72 hrs. New pool discovery Mt. Hope pool Frenchtown field	4,914 Mcf AF 1,500 psi/72 hrs. extension Kantz Corners field	5,690 Mcf AF 1,425 psi/72 hrs. development Kantz Corners field	1,970 Mcf AF 1,375 psi/72 hrs. New field discovery Cochranton field	1,391 Mcf AF 1,350 psi/72 hrs. extension Shaws Corners pool Kantz Corners field

COUNTY Permit Number	Crawford 20839	Crawford 20840	Crawford 20843	Crawford 20844	Crawford 20845	Crawford 20846	Crawford 20847	Crawford 20848	Crawford 20849	Crawford 20851
NAME OF WELL	Joseph L. Vergara #1	Frank W. Neal #1	John Taylor #1	Selma Hackworth #1-A	Robert Payne #1	Paul Ingols #1	Archie L. Shellito #1	Caroline Hatcher #1	Mary Kulik #1	John Poduszlo et al #1
OPERATOR	Meridian Oil & Gas Enterprises, Inc.	Meridian Oil & Gas Enterprises, Inc.	Cardinal Oil Company #58	Meridian Oil & Gas Enterprises, Inc.	Cardinal Oil Company #38	Cardinal Oil Company #35	Flanigan Brothers	Northwest Natural Gas Company	Northwest Natural Gas Company	Cabot Oil & Gas Corporation
TOWNSHIP	Beaver	Conneaut	Cussewago	Conneaut	Spring	Spring	Spring	Spring	Spring	Fairfield
QUADRANGLE & MAP NUMBER	Girard G 590 **Beaver Center G	Linesville B 78 **Linesville	Cambridge Spgs 118 **Edinboro North D	Linesville B 80 **Linesville	Girard E 592 **Conneautville E	Girard I 593 **Conneautville F	Girard I 535 **Conneautville E	Girard E 536 **Beaver Center C	Girard F 537 **Conneautville B	Meadville I 74 **Cochranton H
LATITUDE	10,820 ft. S 41 47'30"	6,380 ft. S 41 45'00"	8,320 ft. S 41 50'00"	5,800 ft. S 41 45'00"	6,270 ft. S 41 50'00"	10,750 ft. S 41 50'00"	500 ft. S 41 50'00"	12,850 ft. S 41 52'30"	9,450 ft. S 41 22'30"	8,500 ft. S 41 32'30"
LONGITUDE	1,820 ft. W 80 17'30"	4,060 ft. W 80 25'00"	9,260 ft. W 80 12'30"	8,880 ft. W 80 25'00"	5,940 ft. W 80 15'00"	6,940 ft. W 80 15'00"	6,100 ft. W 80 17'30"	250 ft. W 80 22'30"	10,550 ft. W 80 17'30"	8,400 ft. W 80 02'30"
DATE COMPLETED	10-24-80	10-10-80	10-7-80	10-2-80	9-31-80	10-8-80	10-18-80	10-18-80	9-22-80	11-14-80
ELEVATION	1104 GR	1193 GR	1140 GR	1180 GR	1244 GR	1337 GR	1160 KB	1070 KB	1135 GR	1357 KB
TULLY	*2160-		*2263-		*2312-	*2474-		2040-	2130-	*3378
ONONDAGA LIMESTONE	2337-	2482-	2455-	*2470-	2502-	2660-	2355-	2211-	2320-	3580-
CHERT										
ORISKANY	2552-?	2680-	Absent	2677-?	2705-	Absent				3748-
HELDERBERG										3776-
KEYSER-BASS ISLAND	2560-	2699-	2659-	2685-	2718-	2863-		2478-	2565-	3812-
SALINA	2630-	2777-	2728-	2762-	2780-	2936-		2566-	2645-	3872-
GUELPH-LOCKPORT	3171-	3352-	3330-	3348	3350-	3516-	3270-	2953-	3182-	4534-
BLACK WATER										
CLINTON	3508-	3682	3619-	3676-	3664-	3759-		3330-	3449-	4898-
IRONDEQUOIT	3572-	3752-	3673-	3746-	3714-		3570-	3430-	3526-	4960-
MEDINA	3612- Gas @3644-3755	3789- Gas @3827-3875	3706- Gas @3732-3865	3781- Gas @3810-3869	3748- Gas @3781-3924	3894- Gas @3901-4053	3642- Gas @3642-3688	3462- Gas @3510-3540	3555- Gas @3598-3638	4996- Gas @5068-5212
WHIRLPOOL	3774-		3881-	3955-	3920-			3636-	3726-	5200-
QUEENSTON	3788-	?	3890-	3962-	3926-	4070-	3795-	3642-	3730-	5213-
TOTAL DEPTH	3888	4060	3960	4064	3990	4140	3811	3655	3740	5347
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	1,500 Mcf AF 1,175 psi/72 hrs. extension Indian Springs pool Conneaut field	1,100 Mcf AF 1,175 psi/72 hrs. development Indian Springs pool Conneaut field	900 Mcf AF 1,100 psi/3 days extension Indian Springs pool Conneaut field	1,350 Mcf AF 1,250 psi/72 hrs. development Indian Springs pool Conneaut field	850 Mcf AF 1,150 psi/3 days development Indian Springs pool Conneaut field	875 Mcf AF 1,100 psi/4 days development Indian Springs pool Conneaut field	200 Mcf AF 1,200 psi/24 hrs. development Lundys Lane pool Conneaut field	900 Mcf AF 1,140 psi/2 days development Lundys Lane pool Conneaut field	1,000 Mcf AF 1,120 psi/2 days development Lundys Lane pool Conneaut field	2,610 Mcf AF 1,350 psi/72 hrs. extension Kantz Corners field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 20852	Crawford 20853	Crawford 20855	Crawford 20856	Crawford 20857	Crawford 20859	Crawford 20860	Crawford 20861	Crawford 20864	Crawford 20865
NAME OF WELL	John & Rose Poduszlo #2	Richard Dalton #1	James D. Mumford #2	Alan Hart #4	Charles Giewont #1	C. & G. Frawley #1	John Frank Steigerwald #2	Harold E. Schweiler #2	G. & B. Egli #1-69	N. & V. Gessner #1-70
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cardinal Oil Company #60	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Mitchell Energy Corporation	Mitchell Energy Corporation
TOWNSHIP	Fairfield	Fairfield	Fairfield	Fairfield	Cussewago	Spring	Spring	Spring	Spring	Spring
QUADRANGLE & MAP NUMBER	Meadville G 82 **Cochranton H	Stoneboro B 26 **New Lebanon A	Meadville H 92 **Geneva I	Meadville H 87 **Geneva I	Girard F 595 **Conneautville C	Girard H 596 **Conneautville D	Girard H 538 **Conneautville D	Girard H 539 **Conneautville D	Girard I 545 **Conneautville E	Girard I 546 **Conneautville E
LATITUDE	12,150 ft. S 41°32'30"	4,200 ft. S 41°30'00"	4,100 ft. S 41°32'30"	8,850 ft. S 41°32'30"	9,800 ft. S 41°52'30"	150 ft. S 42°50'00"	2,850 ft. S 41°50'00"	550 ft. S 41°50'00"	4,600 ft. S 41°50'00"	7,850 ft. S 41°50'00"
LONGITUDE	9,050 ft. W 80°02'30"	1,200 ft. W 80°05'00"	3,100 ft. W 80°07'30"	1,550 ft. W 80°07'30"	4,350 ft. W 80°15'00"	1,100 ft. W 80°20'00"	600 ft. W 80°20'00"	4,150 ft. W 80°20'00"	9,400 ft. W 80°17'30"	8,700 ft. W 80°17'30"
DATE COMPLETED	11-3-80	1-10-81	11-27-80	10-31-80	10-14-80	10-16-80	10-14-80	10-13-80	1-12-80	1-13-80
ELEVATION	1387 KB	1455 GR	1087 KB	1220 GR	1155 GR	1160 GR	1180 GR	1140 GR	1182 GR	1188 GR
TULLY	3434-	*3562-	*3026-	*3217-	*2154-	2208-	2238-	2135-	*2247-	*2270-
ONONDAGA LIMESTONE	3636-	3762-	3210-	3403-	2350-	2398-	2420-	2335-	2429-	2449-
ONONDAGA CHERT										
ORISKANY	3802-	3928-	3390-	3578-	2599-				2641-	2653-
HELDERBERG	3823-	3945-	3410-	3595-						
KEYSER-BASS ISLAND	3849-	3969-	3442-	3612-	2615-	2654-	2652-		2646-	2660-
SALINA	3922-	4040-	3498-	3685-	2676-	2756-	2723-	2684-	2712-	2726-
GUELPH-LOCKPORT	4594-	4712-	4138-	4338-	3256-	3267-	3275-	3230-	3294-	3264-
BLACK WATER										
CLINTON	4956-	5080-	4504-	4698-	3527-	3512-	3540-	3472-	3579-	3592-
IRONDEQUOIT	5018-	5143-	4560-	4757-	3597-	3610-	3624-	3570-	3628-	3648-
MEDINA WHIRLPOOL	5051- Gas @5119-5265 5255-	5181- Gas @5256-5260 5389-	4593- Gas @4652-4717 4792-	4792- Gas @4830-5012 4996-	3635- Gas @3654-3804 3802-	3640- Gas @3666-3748	3654- Gas @3716-3744 3830-	3597- Gas @3631-3672 3780-	3653- Gas @3777-3837 3831-	3674- Gas @3699-3859 3855-
QUEENSTON	5270-	5397-	4808-	5014-	3810-		3835-	3788-	3839-	3862-
TOTAL DEPTH	5325	5522	4930	5123	3896	3812	3864	3794	3915	3862
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	3,714 Mcf AF 1,400 psi/72 hrs. extension Kantz Corners field	5,180 Mcf AF 1,450 psi/24 hrs. development Kantz Corners field	3,710 Mcf AF 1,230 psi/72 hrs development Kantz Corners field	2,890 Mcf AF 1,400 psi/72 hrs. development Kantz Corners field	750 Mcf AF 1,000 psi/3 days extension Pageville pool Conneaut field	1,100 Mcf AF 1,050 psi/24 hrs. development Lundys Lane pool Conneaut field	1.100 Mcf AF 1,150 psi/2 days development Lundys Lane pool Conneaut field	1,500 Mcf AF 1,090 psi/2 days development Lundys Lane pool Conneaut field	306 Mcf AF 1,050 psi/150 hrs development Lundys Lane pool Conneaut field	270 Mcf AF 1,050 psi/62 hrs. development Lundys Lane pool Conneaut field

COUNTY Permit Number	Crawford 20866	Crawford 20867	Crawford 20869	Crawford 20872	Crawford 20873	Crawford 20874	Crawford 20876	Crawford 20877	Crawford 20878	Crawford 20880
NAME OF WELL	Paul Dillinger #1-71	Ralph & Margaret Tau #1	Raymond Deiss #1	Frank Nader #1	Frank Nader #2	Wayne Smith #1	Dale V. Hamilton #2	Patrick Chamberlain #1	Ed Duke #1	Serbian Orthodox Charity Home #7
OPERATOR	Mitchell Energy Corporation	Flanigan Brothers	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cardinal Oil Company #67	Cardinal Oil Company #69	Cardinal Oil Company #64
TOWNSHIP	Spring	Cussewago	Fairfield	Greenwood	Greenwood	East Mead	East Mead	Cussewago	Cussewago	Spring
QUADRANGLE & MAP NUMBER	Girard I 571 **Conneautville F	Cambridge Spgs 58 **Edinboro South	Meadville H 93 **Geneva I	Stoneboro A 46 **Hadley B	Stoneboro A 28 **Hadley A	Meadville F 88 **Cochranton B	Meadville F 89 **Cochranton B	Girard F 597 **Conneautville C	Girard I 598 **Conneautville F	Girard H 547 **Beaver Center F
LATITUDE	3,850 ft. S 41°50'00"	5,200 ft. S 41°47'30"	11,750 ft. S 41°32'30"	1,800 ft. S 41°30'00"	3,800 ft. S 41°30'00"	12,100 ft. S 41°37'30"	4,400 ft. S 41°37'30"	10,450 ft. S 42°52'30"	770 ft. S 42°50'00"	3,560 ft. S 41°50'00"
LONGITUDE	11,200 ft. W 80°15'00"	9,900 ft. W 80°12'30"	5,400 ft. W 80°07'30"	10,700 ft. W 80°10'00"	1,350 ft. W 80°12'30"	5,600 ft. W 80°02'30"	7,000 ft. W 80°02'30"	1,150 ft. W 80°15'00"	2,940 ft. W 80°15'00"	2,640 ft. W 80°22'30"
DATE COMPLETED	10-31-80	10-23-80	12-7-80	11-13-80	11-23-80	11-16-80	12-8-80	11-5-80	10-15-80	10-27-80
ELEVATION	1247 GR	1120 KB	1372 KB	1300 GR	1250 GR	1250 GR	1525 GR	1180 GR	1178 GR	911 GR
TULLY	*2296-		*3344-	*3250-	*3189-	*3073-	*3302-	*2200-	*2232-	*1894-
ONONDAGA LIMESTONE CHERT	2484-		3523-	3416-	3150-	3270-	3500-	2390-	2428-	2070-
ORISKANY	2691-		3700-	3600-	3533-	3457-	3687-	Bois Blanc 2576-	Absent	Absent
HELDERBERG	2698-		3719-		3551-	3473-	3703-			
KEYSER-BASS ISLAND	2723-		3743-	3610-	3594-	3517-	3743-	2636-	2652-	2344-
SALINA	2767-		3814-	3707-	3647-	3568-	3789-	2714-	2744-	2413-
GUELPH-LOCKPORT BLACK WATER	3338-	3600-	4472-	4387-	4332-	4188-	4404-	3292-	3317-	2986-
CLINTON	3601-		4833-	4744-	4701-	4548-	4762-	3582-	3570-	3274-
IRONDEQUOIT	3671-	3739-	4892-	4800-	4759-	4602-	4822-	3634-	3621-	3326-
MEDINA WHIRLPOOL	3696- Gas @3746-3884 3881-	3832- Gas @3835-3910 3950-	4928- Gas @4987-5084 5129-	4857- Gas @4908-4965 5039-	4794- Gas @4852-5010 4998-	4634- Gas @4691-4833 4830-	4851- Gas @4903-5009 5048-	3666- Gas @3701-3842 3839-	3653- Gas @3658-3830 3825-	3358- Gas @3376-3535 3531-
QUEENSTON	3888-	3980-	5147-	5055-	5011-	4848-	5063-	3844-	3833-	3538-
TOTAL DEPTH	3957	3980	5219	5160	5121	4950	5196	3954	3877	3654
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	778 Mcf AF 950 psi/62 hrs. extension Indian Springs pool Conneaut field	200 Mcf AF 1,200 psi/24 hrs development Indian Springs pool Conneaut field	2.900 Mcf AF 1,400 psi/72 hrs extension Kantz Corners field	222 Mcf AF 1,125 psi/72 hrs. development Rock Creek pool Geneva field	529 Mcf AF 1,350 psi/72 hrs extension Rock Creek pool Geneva field	1,400 Mcf AF 1,200 psi/72 hrs. extension Papenfuse field	1,400 Mcf AF 1,200 psi/72 hrs. New field discovery Papenfuse field	850 Mcf AF 1,150 psi/3 days extension Pageville pool Conneaut field	800 Mcf AF 1,075 psi/3 days extension Indian Springs pool Conneaut field	910 Mcf AF 1,175 psi/3days development Springboro pool Conneaut field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 20882	Crawford 20884	Crawford 20885	Crawford 20887	Crawford 20896	Crawford 20897	Crawford 20898	Crawford 20899	Crawford 20900	Crawford 20905
NAME OF WELL	J. A. Stagl #1-66	Dorn #1	Allen #1	Elizabeth, Wm. & Richard Roeder #1	Serbian Orthodox Charity Home #9	Richard H. Ertman #1	E. & E. Rung #1-S	Walter Sutton #1	Albert D. McNamara #3	R. & R. Abbott #1-67
OPERATOR	Mitchell Energy Corporation	POI Energy, Incorporated	POI Energy, Incorporated	Wainoco Oil & Gas Company #W-79	Cardinal Oil Company #74	Cardinal Oil Company #75	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Mitchell Energy Corporation
TOWNSHIP	Spring	Sparta	Sparta	Rome	Spring	Spring	Fairfield	Wayne	East Mead	Spring
QUADRANGLE & MAP NUMBER	Girard H 548 **Conneautville H	Union City I 130 **Lake Canadohta	Union City I 131 **Lake Canadohta	Titusville C 10 **Titusville North	Girard H 549 **Beaver Center F	Girard I 599 **Conneautville F	Meadville H 90 **Cochranton D	Meadville I 91 **Cochranton F	Meadville F 102 **Cochranton B	Girard I 565 **Conneautville E
LATITUDE	25 ft. S 41°50'00"	5,250 ft. S 41 47'30"	5,350 ft. S 41 47'30"	12,350 ft. S 41°45'00"	2,160 ft. S 41°50'00"	12,870 ft. S 42°50'00"	13,500 ft. S 41°35'00"	14,900 ft. S 41°35'00"	5,400 ft. S 41°37'30"	900 ft. S 41°50'00"
LONGITUDE	1,750 ft. W 80°20'00"	2,200 ft. W 79°45'00"	5,400 ft. W 79°45'00"	5,550 ft. W 79°37'30"	3,280 ft. W 80°22'30"	5,810 ft. W 80°15'00"	8,000 ft. W 80°05'00"	6,600 ft. W 80°00'00"	450 ft. W 80°02'30"	2,900 ft. W 80°17'30"
DATE COMPLETED	1-22-81	11-16-80	12-5-80	10-23-80	10-19-80	11-3-80	10-23-80	11-12-80	1-27-81	1-26-81
ELEVATION	1154 GR	1485 GR	1530 GR	1530 GR?	921 GR	1299 GR	1060 GR	1401 KB	1260 GR	1188 KB
TULLY	*2172-	3192-	3231-	*3640-	*1902-	*2466-	*3031-	*3416-	3089-	*2226-
ONONDAGA LIMESTONE	2354-	3431-	3469-	3902-	2078-	2650-	3226-	3630-	3291-	2416-
ONONDAGA CHERT										
ORISKANY	2570-			Absent	Absent	Absent	3407-	3407-	3475-	2634-
HELDERBERG	2578-						3422-	3818-	3490-	2642-
KEYSER-BASS ISLAND	2608-			4040-	2344-	2854-	3448-	3859-		2667-
SALINA	2677-	3909-	3957-	4114-	2412-	2923-	3510-	3915-	3780-	2708-
GUELPH-LOCKPORT	3263-	4217-	4258-	4685-	2989-	3536-	4122-	4556-	4178-	3294-
BLACK WATER										
CLINTON	3515-	4534-	4585-	5052-	3273-	3778-	4494-	4902-	4535-	3554-
IRONDEQUOIT	3566-	4631-	4668-	5117-	3329-	3847-	4553-	4968-	4594-	3602-
MEDINA WHIRLPOOL	3570- Gas @3623-3672 3754-	3677- Gas @4709-4844 4841-	4714- Gas @4756-4881 4875-	5161- Gas @5220-5340 5331-	3361- Gas @3378-3540 3535-	3884- Gas @3902-4061	4587- Gas @4666-4801 4786-	5000- Gas @5061-5211 5202	4644- Gas @4680-4763 4818-	3628- Gas @3678-3810 3804-
QUEENSTON	3776-	4851-	4883-	5343-	3542-	4064-	4803-	5214-	4836-	3813-
TOTAL DEPTH	3850	4992	4963	5464	3621	4094	4911	5214	4933	3885
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	360 Mcf AF 900 psi/14 hrs. development Lundys Lane pool Conneaut field	275 Mcf AF 1,250 psi/7 days extension Brimstone pool Athens field	250 Mcf AF 1,250 psi/7 days development Brimstone pool Athens field	2,768 Mcf AF 1,450 psi/72 hrs. extension Vrooman pool Church Run field	950 Mcf AF 1,200 psi/3 days extension Lundys Lane pool Conneaut field	900 Mcf AF 1,100 psi/4 days development Indian Springs pool Conneaut field	1,210 Mcf AF 1,350 psi/72 hrs. extension Kantz Corners field	2,420 Mcf AF 1,300 psi/72 hrs. New pool discovery Round Knob pool Kantz Corners field	915 Mcf AF 1,225 psi/72 hrs. extension Papenfuse field	489 Mcf AF 1,050 psi/82 hrs. extension Lundys Lane pool Conneaut field

COUNTY Permit Number		Crawford 20906	Crawford 20908	Crawford 20909	Crawford 20910	Crawford 20916	Crawford 20918	Crawford 20922	Crawford 20926	Crawford 20928	Crawford 20929
NAME OF WELL		R. E. Thompson #1	Leroy Wheeler #1	Earl Hamilton #3	George Baran #1	Walter Mook #1	Charles E. Irwin #1	J. & M. Varee #1-68	R. & J. Worley #1-77	B. Jordan #1	J. R. Wilson #1
OPERATOR		Cardinal Oil Company #77	Cardinal Oil Company #78	Cardinal Oil Company #81	Cardinal Oil Company #80	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Cardinal Oil Company #63	Cardinal Oil Company #66
TOWNSHIP		Beaver	Spring	Spring	Spring	Greenwood	Fairfield	Spring	Cussewago	Spring	Spring
QUADRANGLE & MAP NUMBER		Girard H 600 **Beaver Center F	Girard H 601 **Beaver Center I	Girard H 550 **Beaver Center F	Girard H 551 **Conneautville O	Meadville G 111 **Geneva H	Meadville I 94 **Cochranton H	Girard I 572 **Conneautville E	Cambridge Spgs 108 **Edinboro South	Girard E 602 **Beaver Center C	Girard E 603 **Beaver Center C
LATITUDE		14,200 ft. S 41°50'00"	360 ft. S 41 47'30"	10,320 ft. S 41 50'00"	3,320 ft. S 41 50'00"	8,350 ft. S 41°32'30"	8,500 ft. S 41°32'30"	4,150 ft. S 41°50'00"	14,500 ft. S 41°50'00"	12,400 ft. S 41°52'30"	13,700 ft. S 41°52'30"
LONGITUDE		9,580 ft. W 80°22'30"	8,600 ft. W 80°22'30"	4,040 ft. W 80°22'30"	11,120 ft. W 80°20'00"	3,950 ft. W 80 10'00"	6,200 ft. W 80°02'30"	2,700 ft. W 80°17'30"	10,050 ft. W 80°10'00"	5,920 ft. W 80°22'30"	5,360 ft. W 80°22'30"
DATE COMPLETED		11-12-80	11-21-80	10-27-80	10-27-80	12-20-80	12-16-80	11-19-80	11-26-80	2-8-81	12-4-80
ELEVATION		1011 GR	999 GR	930 GR	1085 GR	1320 GR	1135 GR	1152 GR	1279 GR	925 GR	923 GR
TULLY		*2036-	*2040-	*1972-	*2084-	*3268-	*3174-	*2218-	*2485-	1912-	*1904-
ONONDAGA	LIMESTONE	2207-	2209-	2150-	2262-	3430-	3378-	2406-	2679-	2086-	2075-
	CHERT										
ORISKANY		Absent	Absent	Absent	Absent	3612-	3546-	2616-	2875-	2346-	Absent
HELDERBERG							3568-	2620-	2879-		
KEYSER-BASS ISLAND		2446-	2438-	2384-	2531-	3628-	3610-	2646-	2894-	2462-	2283-
SALINA		2525-	2520-	2462-	2600-	3718-	3670-	2688-	2946-	2542-	2405-
GUELPH-LOCKPORT		3134-	3134-	3057-	3173-	4376-	4322-	3186-	3502-	2966-	2956-
BLACK WATER											
CLINTON		3405-	3403-	3328-	3442-	4733-	4694-	3484-	3844-	3244-	3222-
IRONDEQUOIT		3474-	3473-	3398-	3511-	4790-	4755-	3588-	3898-		3290-
MEDINA		3506- Gas @3550-3686	3504- Gas @3526-3686	3433- Gas @3474-3609	3547- Gas @3565-3723	4844- Gas @4886-4944	4787- Gas @4823-4940	3626- Gas @3626-3799	3946- Gas @3956-4112	3332- Gas @3352-3508	3323- Gas @3339-3495
WHIRLPOOL		3681-	3683-	3608-	3720-	5025-	4991-	3793-	4104-		3495-
QUEENSTON		3689-	3688-	3616-	3730-	5041-	5004-	3803-	4113-	3512-	3500-
TOTAL DEPTH		3764	3739	3676	3820	5130	5023	3862	4159	3583	3629
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		700 Mcf AF 1,100 psi/3 days extension Indian Springs pool Conneaut field	725 Mcf AF 1,050 pis/3 days development Indian Springs pool Conneaut field	920 Mcf AF 1,160 psi/3 days extension Springboro pool Conneaut field	900 Mcf AF 1,100 psi/3 days development Springboro pool Conneaut field	696 Mcf AF 1,310 psi/72 hrs. extension Kantz Corners field	5,040 Mcf AF 1,460 psi/72 hrs. extension Kantz Corners field	720 Mcf AF 875 psi/36 hrs. development Indian Springs pool Conneaut field	864 Mcf AF 1,000 psi/243 hrs. extension Kastle pool Conneaut field	600 Mcf AF 1,095 psi/3 days extension Pennside pool Conneaut field	650 Mcf AF 1,100 psi/3 days extension Lundys Lane pool Conneaut field

Figure 32. (Continued)

COUNTY Permit Number		Crawford 20930	Crawford 20931	Crawford 20938	Crawford 20940	Crawford 20941	Crawford 20942	Crawford 20943	Crawford 20944	Crawford 20945	Crawford 20947
NAME OF WELL		Gordon Emig #1	Raymond Shafer #1	Lewis Oersch #1	M. & J. Gessner #2-84	Michael & Nancy Huya #1-76	John Hepak #1	D. & J. Fry #1-75	Thomas O'Donnell ##1	Fred & Jeanne Moon #2	E. & G. Wheeler #2-93
OPERATOR		Blackfoot Cherokee Goe Pro, Inc.	Blackfoot Cherokee Goe Pro, Inc.	Cardinal Oil Company #68	Mitchell Energy Corporation	Mitchell Energy Corporation	Northwest Natural Gas Company	Mitchell Energy Corporation	Cardinal Oil Company #82	Northwest Natural Gas Company	Mitchell Energy Corporation
TOWNSHIP		West Mead	Union	Spring	Spring	Cussewago	Spring	Conneaut	Beaver	Spring	Conneaut
QUADRANGLE & MAP NUMBER		Meadville E 112 **Cochranton A	Meadville G 95 **Geneva E	Girard F 604 **Conneautville C	Girard H 573 **Conneautville D	Cambridge Spgs 109 **Edinboro South	Girard F 605 **Conneautville	Linesville A 81 **Linesville	Girard G 568 **Beaver Center E	Girard 657 **Conneautville	Linesville E 82 **Linesville
LATITUDE		10,900 ft. S 41°37'30"	6,900 ft. S 41°35'00"	10,500 ft. S 41°52'30"	7,600 ft. S 41°50'00"	6,700 ft. S 41°47'30"	10,150 ft. S 41°52'30"	7,200 ft. S 41°42'30"	5,340 ft. S 41°50'00"	11,200 ft. S 41°52'30"	4,450 ft. S 41°42'30"
LONGITUDE		4,700 ft. W 80°05'00"	350 ft. W 80°10'00"	8,050 ft. W 80°15'00"	400 ft. W 80°20'00"	4,650 ft. W 80°12'30"	4,770 ft. W 80°17'30"	5,450 ft. W 80°25'00"	5,120 ft. W 80°25'00"	11,250 ft. W 80°20'00"	9,000 ft. W 80°25'00"
DATE COMPLETED		12-12-80	12-13-80	11-24-80	12-10-80	12-5-80	11-7-80	12-17-80	1-24-81	11-15-80	1-9-81
ELEVATION		1470 GR	a400 GR	1142 GR	1212 GR	1138 GR	1110 GR	1188 GR	1015 GR	1075 GR	1152 GR
TULLY		3332-	3180-	*2125-	*2294-	*2360-	2080-	*2432-	*2012-	2247-	*2365-
ONONDAGA	LIMESTONE	3436-	3362-	2327-	2472-	2546-	2278-	2584-	2171-	2223-	2516-
	CHERT										
ORISKANY		3780-	3560-	Absent	2682-	2744-		2789-	Absent		2726-
HELDERBERG					2990-	2750-					
KEYSER-BASS ISLAND				2584-	2710-	2777-	2480-	2794-	2418-	2484-	2733
SALINA		3920-		2667-	2754-	2821-	2598-	2870-	2502-	2562-	2806-
GUELPH-LOCKPORT				3232-	3280-	3398-	2960-	3490-	3072-	3093-	3420-
BLACK WATER											
CLINTON				3500-	3602-	3737-	3367-	3838-	3352-	3324-	3742-
IRONDEQUOIT		4720-		3570-	3672-	3791-	3486-	3889-	3406-		3812-
MEDINA		4800- Gas @5004-5015	4782- Gas @4832-4971	3604- Gas @3626-3782	3716- Gas @3727-3887	3828- Gas @3832-3861	3518- Gas @3546-3641	3929- Gas @3957-4112	3429- Gas @3461-3591	3424-	3851- Gas @3873-4031
WHIRLPOOL		4950-	4950-	3778-	3882-	3998-	3694-	4105-	3612-		4026-
QUEENSTON		5020-	4973-	3785-	3889-	4007-	3700-	4113-	3616-		4031-
TOTAL DEPTH		5136	5089	3816	3959	4050	3725	4158	3706	3653	4080
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		1,100 Mcf AF 650 psi/3 days Deeper pool discovery Tamarack Lake pool Meadville field	3,000 Mcf AF 1,300 psi/72 hrs. New pool discovery Barco pool Kantz Corners field	800 Mcf AF 1,050 psi/3 days extension Pageville pool Conneaut field	732 Mcf AF 950 psi/134 hrs. development Lundys Lane pool Conneaut field	2,280 Mcf AF 950 psi/72 hrs. development Kastle pool Conneaut field	1,500 Mcf AF 1,005 psi/24 hrs. development Lundys Lane pool Conneaut field	646 Mcf AF 1,050 psi/38 hrs. New pool discovery Blood pool Conneaut field	500 Mcf AF 1,100 psi/5 days development Stone Run pool Conneaut field	850 Mcf AF 1,000 psi/2 days development Lundys Lane pool Conneaut field	1,563 Mcf AF 1,190 psi/110 hrs extension Blood pool Conneaut field

COUNTY Permit Number	Crawford 20962	Crawford 20964	Crawford 20966	Crawford 20967	Crawford 20978	Crawford 21092	Crawford 21095	Crawford 21097	Crawford 21101	Crawford 21102
NAME OF WELL	Thomas Johnston #1	Helen Todd #1	Rudolph Mion #1	Menno Sommers #1	G. Heinzelman #1	Albert McNamara #1	Raymond Deiss #2	G. Heinzelman #2	Marion W. Alsdorf #1	Frank Kozik #1
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Wainoco Oil & Gas Company #W-87	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Wainoco Oil & Gas Company #W-88	Wainoco Oil & Gas Company #W-91	Wainoco Oil & Gas Company #W-90
TOWNSHIP	Fairfield	Fairfield	Fairfield	Fairfield	Bloomfield	East Mead	Fairfield	Bloomfield	Bloomfield	Bloomfield
QUADRANGLE & MAP NUMBER	Stoneboro C 35 **New Lebanon B	Stoneboro 8 27 *8New Lebanon A	Meadville I 104 **Cochranton H	Meadville H 105 **Cochranton G	Union City I 154 **Lake Canadohta	Meadville F 98 **Cochranton B	Meadville H 99 **Geneva I	Union City I 155 **Lake Canadohta	Union City I 156 **Lake Canadohta	Union City I 157 **Lake Canadohta
LATITUDE	4,100 ft. S 41°30'00"	3,500 ft. S 41°30'00"	14,900 ft. S 41°32'30"	13,200 ft. S 41°32'30"	2,100 ft. S 41°50'00"	1,800 ft. S 41°37'30"	13,800 ft. S 41°32'30"	4,100 ft. S 41°50'00"	4,100 ft. S 41°50'00"	9,350 ft. S 41°50'00"
LONGITUDE	9,500 ft. W 80°02'30"	11,200 ft. W 80°05'00"	6,850 ft. W 80 02'30"	11,200 ft. W 80°05'00"	400 ft. W 79°47'30"	4,900 ft. W 80°02'30"	5,300 ft. W 80°07'30"	9,450 ft. W 79°45'00"	2,600 ft. W 79°47'30"	9,400 ft. W 79 45'00"
DATE COMPLETED	2-29-81	1-19-81	3-8-81	2-6-81	1-28-81	2-7-82	1-28-81	2-5-81	2-18-81	2-19-81
ELEVATION	1445 GR	1420 GR	1300 GR	1360 GR	1520 GR	1400 GR	1400 GR	1490 GR	1640 GR	1455 GR
TULLY	*3569-	*3447-	*3396-	*3389-	*3048-	*3208-	*3390-	*3039-	*3160-	*3033-
ONONDAGA LIMESTONE	3770-	3632-	3599-	3575-	3289-	3407-	3570-	3276-	3397-	3289-
CHERT										
ORISKANY	3932-	3806-	3760-	3749-	Absent	3592-	3742-	Absent	Absent	Absent
HELDERBERG	3952-	3824-	3782-	3764-		3606-	3761-			
KEYSER-BASS ISLAND	3999-	3850-	3829-	3812-	3465-	3646-	3790-	3449-	3571-	3432-
SALINA	4055-	3920-	3884-	3862-	3518-	3690-	3858-	3505-	3624-	3496-
GUELPH-LOCKPORT BLACK WATER	4786-	4627-	4552-	4539-	4034-	4300-	4514-	4036-	4150-	4030-
CLINTON	5079-	4994-	4917-	4896-	4372-	4662-	4890-	4359-	4493-	4368-
IRONDEQUOIT	5146-	5039-	4976-	4957-	4434-	4721-	4950-	4439-	4554-	4437-
MEDINA WHIRLPOOL	5206- Gas @5226-5315 5386-	5081- Gas @5153-5254 5297-	5011- Gas @5082-5176 5216-	4992- Gas @5033-5125 5194-	4475- Gas @4484-4650 4638-	4750- Gas @4826-4906 4948-	4985- Gas @5050-5144 5190-	4483- Gas @4492-4655 4644-	4594- Gas @4588-4717 4760-	4481- Gas @4491-4655 4643-
QUEENSTON	5398-	5311-	5226-	5211-	4653-	4960-	5205-	4657-	4778-	4657-
TOTAL DEPTH	5493	5412	5303	5285	4793	5020	5337	4798	4900	4789
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	2,370 Mcf AF 1,300 psi/72 hrs. development Kantz Corners field	1,020 Mcf AF 1,300 psi/72 hrs. extension Kantz Corners field	2,694 Mcf AF 1,425 psi/72 hrs. extension Kantz Corners field	3,500 Mcf AF 1,380 psi/72 hrs. extension Kantz Corners field	531 Mcf AF 1,210 psi/10 days extension Dutch Hill pool Athens field	1,205 Mcf AF 1,130 psi/72 hrs. extension Papenfuse field	1,050 Mcf AF 1,325 psi/72 hrs. development Kantz Corners field	189 Mcf AF 1,220 psi/10 days extension Dutch Hill pool Athens field	1,132 Mcf AF 1,290 psi/72 hrs. development Dutch Hill pool Athens field	959 Mcf AF 1,260 psi/3 days extension Dutch Hill pool Athens field

Figure 32. (Continued)

COUNTY Permit Number		Crawford 21103	Crawford 21 06	Crawford 21109	Crawford 21114	Crawford 21115	Crawford 21116	Crawford 21117	Crawford 21118	Crawford 21128	Crawford 21130
NAME OF WELL		Helen Dennis #1	Maurice Dickson #1	Donald J. Parkin #1	Frye-Bilski #1	John Roberts #1	Stanley Rosposki #1	Philip D. Wheeling #1	Glen Freyermuth #1	Richard Dunn #1	Robert Dickson #1
OPERATOR		Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Wainoco Oil & Gas Company #W-96	Cardinal Oil Company #71	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP		Fairfield	East Fairfield	Bloomfield	Cussewago	Fairfield	Fairfield	Fairfield	East Fairfield	East Fairfield	East Fairfield
QUADRANGLE & MAP NUMBER		Stoneboro B 32 **New Lebanon A	Meadville I 114 **Cochranton H	Union City I 159 **Lake Canadohta	Girard I 606 **Conneautville	Stoneboro C 29 **New Lebanon B	Stoneboro C 38 **New Lebanon B	Stoneboro C 31 **New Lebanon B	Meadville I 115 **Cochranton E	Meadville H 116 **Cochranton D	Meadville I 117 **Cochranton H
LATITUDE		1,250 ft. S 41°30'00"	1,650 ft. S 41°32'30"	7,200 ft. S 41°50'00"	800 ft. S 41°50'00"	3,800 ft. S 41°30'00"	1,400 ft. S 41°30'00"	2,000 ft. S 41°30'00"	3,750 ft. S 41°35'00"	5,900 ft. S 41°35'00"	200 ft. S 41°32'30"
LONGITUDE		6,250 ft. W 80°05'00"	1,400 ft. W 80°02'30"	4,750 ft. W 79°47'30"	4,400 ft. W 80°15'00"	2,000 ft. W 80°02'30"	1,150 ft. W 80°02'30"	3,750 ft. W 80°02'30"	6,600 ft. W 80°02'30"	4,500 ft. W 80°05'00"	4,050 ft. W 80°02'30"
DATE COMPLETED		2-16-81	3-14-81	2-26-81	5-17-81	3-16-81	5-9-81	3-28-81	3-3-81	6-8-81	5-27-81
ELEVATION		1430 GR	1365 GR	1455 GR	1180 GR	1500 GR	1480 GR	1390 GR	1210 GR	1360 GR	1390 GR
TULLY		*3476-	*3410-	2991-	*2250-	*3671-	*3629-	*3529-	*3117-	*3250-	*3400-
ONONDAGA	LIMESTONE	3667-	3620-	3228-	2444-	3880-	3838-	3734-	3314-	3444-	3609-
	CHERT										
ORISKANY		3837-	3887-		2670-	4040-	3996-	3893-	3493-	3625-	3780-
HELDERBERG		3860				4062-		3912-			
KEYSER-BASS ISLAND		3910-	3810-		2688-	4106-	4017-	3954-	3516-	3640-	3803-
SALINA		3956-	3904-	3463-	2750-	4171-	4124-	4018-	3598-	3725-	3892-
GUELPH-LOCKPORT		4640-	4540-		3302-	4812-	4778-	4740-	4202-	4320-	4524-
BLACK WATER											
CLINTON		4998-	4900-		3584-	5190-	5140-	5032-	4560-	4686-	4886-
IRONDEQUOIT		5026-	4966-	4396-	3634-	5243-	5205-	5097-	4619-	4744-	4946-
MEDINA		5069- Gas @5128-5246	5021- Gas @5027-5160	4440- Gas @4428-4609	3672- Gas @3698-3846	5279- Gas @5372-5446	5265- Gas @5313-5408	5133- Gas @5171-5297	4671- Gas @4709-4800	4795- Gas @4819-4938	5001- Gas @5054-5133
WHIRLPOOL		5304-	5161-	4602-	3839-	5485-	5447-	5335-	4848-	4976-	5181-
QUEENSTON		5318-		4617-	3846-	5495-	5456-	5347-	4866-	4991-	5196-
TOTAL DEPTH		5416	5268	4761	3908	5567	5539	5448	5010	5069	5270
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		2,500 Mcf AF 1,375 psi/72 hrs. development Kantz Corners field	1,302 Mcf AF 1,350 psi/72 hrs. extension Round Knob pool Kantz Corners field	933 Mcf AF 1,300 psi/72 hrs. development Dutch Hill pool Athens field	171 Mcf AF 1,150 psi/4 days development Indian Springs pool Conneaut field	6,065 Mcf AF 1,450 psi/72 hrs. New pool discovery McDaniels pool Cochranton field	1,460 Mcf AF 1,425 psi/72 hrs. development McDaniels pool Cochranton field	2,200 Mcf AF 1,400 psi/72 hrs. extension McDaniels pool Cochranton field	1,338 Mcf AF 1,375 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	1,283 Mcf AF 1,400 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	1,143 Mcf AF 1,375 psi/72 hrs. extension East Fairfield pool Kantz Corners field

COUNTY Permit Number		Crawford 21132	Crawford 21133	Crawford 21137	Crawford 21138	Crawford 21147	Crawford 21148	Crawford 21150	Crawford 21151	Crawford 21152	Crawford 21153
NAME OF WELL		Steve Janoski #1	Richard A. Trojak #1	James Fioretti #1	James & Connie Miller #1	Marion Hamilton #1	Allen Hart #3	Charles Morrell #1	Robert Dunlavey #1	Helen Dennis #2	Joseph Moran #1
OPERATOR		Wainoco Oil & Gas Company #W-101	Wainoco Oil & Gas Company #W-102	Wainoco Oil & Gas Company #W-106	Wainoco Oil & Gas Company #W-107	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP		Bloomfield	Bloomfield	Bloomfield	Bloomfield	Fairfield	Fairfield	Wayne	Fairfield	Fairfield	Fairfield
QUADRANGLE & MAP NUMBER		Union City H 160 **Lake Canadohta	Union City I 161 **Lake Canadohta	Union City F 162 **Lake Canadohta	Union City I 163 **Lake Canadohta	Meadville I 106 **Cochranton H	Meadville H 107 **Cochranton G	Meadville I 118 **Cochranton F	Meadville I 108 **Cochranton H	Stoneboro B 39 **New Lebanon A	Meadville H 119 **Cochranton G
LATITUDE		12,150 ft. S 41°50'00"	2,500 ft. S 41°47'30"	12,400 ft. S 41°52'30"	4,200 ft. S 41°47'30"	14,800 ft. S 41°32'30"	3,200 ft. S 41°32'30"	14,100 ft. S 41°35'00"	10,900 ft. S 41°32'30"	1,200 ft. S 41°30'00"	12,800 ft. S 41°32'30"
LONGITUDE		150 ft. W 79°50'00"	10,500 ft. W 79°47'30"	9,100 ft. W 79°47'30"	5,700 ft. W 79°47'30"	3,350 ft. W 80°02'30"	4,800 ft. W 80°05'00"	9,300 ft. W 80°00'00"	4,200 ft. W 80°02'30"	9,350 ft. W 80°05'00"	8,900 ft. W 80°00'00"
DATE COMPLETED		5-7-81	4-11-81	3-16-81	4-3-81	3-27-81	4-3-81	6-22-81	4-14-81	5-15-81	5-23-81
ELEVATION		1390 GR	1410 GR	1610 GR	1380 GR	1450 GR	1170 GR	1460 GR	1270 GR	1410 GR	1370 GR
TULLY		*2936-	*3018-	*3050-	*3006-	*3557-	*3158-	*3482-	*3380-	*3441-	*3402-
ONONDAGA	LIMESTONE	3170-	3254-	3285-	3238-	3759-	3352-	3690-	3586-	3628-	3588-
	CHERT										
ORISKANY		3352-	Absent	Absent	Absent	3922-	3528-	3858-	3751-	3801-	3759-
HELDERBERG						3946-	3550-		3774-		
KEYSER-BASS ISLAND		3363-	3430-	3470-	3411-	4000-	3586-	3880-	3820-	3818-	3778-
SALINA		3418-	3490-	3521-	3467-	4048-	3636-	3978-	3885-	3918-	3871-
GUELPH-LOCKPORT BLACK WATER		3936-	4026-	4042-	4028-	4708-	4280-	4610-	4540-	4614-	4552-
CLINTON		4286-	4346-	4385-	4366-	5064-	4635-	4965-	4900-	4971-	4906-
IRONDEQUOIT		4345-	4436-	4445-	4428-	5135-	4696-	5025-	4961-	5031-	4965-
MEDINA		4390- Gas @4417-4557	4481- Gas @4515-4651	4484- Gas @4536-4596	4476- Gas @4563-4642	5167- Gas @5234-5240	4730- Gas @4756-4861	5080- Gas @5124-5216	5018- Gas @5066-5132	5088- Gas @5111-5249	5021- Gas @5033-5160
WHIRLPOOL		4548-	4643-	4648-	4635-	5370-	4931-	5258-	5197-	5273-	5204-
QUEENSTON		4562-	4661-	4657-	4653-	5378-	4946-	5271-	5208-	5286-	5219-
TOTAL DEPTH		4693	4808	4827	4778	5489	5036	5346	5278	5383	5327
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		402 Mcf AF 1,275 psi/48 hrs. extension Dutch Hill pool Athens field	713 Mcf AF 1,280 psi/48 hrs. extension Lincolnville pool Athens field	155 Mcf AF 1,220 psi/48 hrs. extension Dutch Hill pool Athens field	440 Mcf AF 1,300 psi/48 hrs. extension Brimstone pool Athens field	852 Mcf AF 1,370 psi/72 hrs. extension Cochranton field	211 Mcf AF 1,450 psi/72 hrs. development Kantz Corners field	1,900 Mcf AF 1,360 psi/72 hrs. development Round Knob pool Kantz Corners field	1,807 Mcf AF 1,275 psi/72 hrs. extension Cochranton field	5,870 Mcf AF 1,475 psi/72 hrs. development Kantz Corners field	3,390 Mcf AF 1,425 psi/72 hrs. development Kantz Corners field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 21156	Crawford 21157	Crawford 21158	Crawford 21159	Crawford 21160	Crawford 21161	Crawford 21163	Crawford 21164	Crawford 21166	Crawford 21167
NAME OF WELL	J. Pritoka, Jr. #1-81	C. & E. Fryrear #1-82	E. Papaioanou #1-83	T. S. & R. M. Barron #1-85	R. & A. Schneider #1-87	R. & J. Worley #2-92	Elsie L. Ferm #1-78	A. & M. Hritzay #1-97	John Schneider #1	John Schneider #2
OPERATOR	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	Spring	Spring	Spring	Spring	Cussewago	Cussewago	Summerhill	Cussewago	Fairfield	Fairfield
QUADRANGLE & MAP NUMBER	Girard F 631 **Conneautville	Girard F 607 **Conneautville	Girard I 632 **Conneautville	Girard I 633 **Conneautville	Cambridge Spgs 16 **Edinboro South	Cambridge Spgs 161 **Edinboro South	Linesville B 83 **Harmonsburg A	Cambridge Spgs 162 **Edinboro South	Stoneboro B 40 **New Lebanon A	Stoneboro B 41 **New Lebanon A
LATITUDE	12,400 ft. S 41°52'30"	14,700 ft. S 41°52'30"	2,100 ft. S 41°50'00"	10,800 ft. S 41°50'00"	8,000 ft. S 41°47'30"	7,300 ft. S 41°47'30"	2,100 ft. S 41°45'00"	2,300 ft. S 41°47'30"	2,900 ft. S 41°30'00"	3,300 ft. S 41°30'00"
LONGITUDE	8,200 ft. W 80°15'00"	100 ft. W 80°17'30"	9,800 ft. W 80°15'00"	10,250 ft. W 80°17'30"	9,200 ft. W 80°10'00"	1,000 ft. W 80°12'30"	10,100 ft. W 80°20'00"	11,200 ft. W 80°10'00"	2,900 ft. W 80°05'00"	5,200 ft. W 80°05'00"
DATE COMPLETED	6-17-81	6-11-81	6-4-81	6-26-81	7-14-81	7-4-81	5-30-81	7-6-81	6-29-81	6-2-81
ELEVATION	1132 GR	1172 GR	1181 GR	1212 GR	1262 GR	1208 GR	1033 GR	1245 GR	1445 GR	1460 GR
TULLY	*2144-	*2216-	*2226-	*2327-	*2517-	*2454-	*2221-	*2457-		*3540-
ONONDAGA LIMESTONE	2343-	2410-	2416-	2504-	2702-	2640-	2386-	2645-		3738-
ONONDAGA CHERT										
ORISKANY	2562-	2638-	2627-	2711-	2900-	2841-	Bois Blanc 2581-2608	2840-		3906-
HELDERBERG										
KEYSER-BASS ISLAND	2581-	2644-	2635-	2714-	2906-	2850-	2608-	2847-		3924-
SALINA	2689-	2719-	2702-	2779-	2976-	2923-	2662-	2916-		4022-
GUELPH-LOCKPORT	3179-	3206-	3188-	3370-	3536-	3486-	3242-	3460-		4720-
BLACK WATER										
CLINTON	3499-	3530-	3552-	3651-	3889-	3823-	3581-	3816-		5077-
IRONDEQUOIT	3570-	3599-	3602-	3708-	3945-	3878-	3651-	3870-	*5135-	5138-
MEDINA WHIRLPOOL	3619- Gas @3608-3780 3774-	3643- Gas @3637-3812 3808-	3638- Gas @3640-3815 3813-	3744- Gas @3768-3922 3918-	3983- Gas @3986-4158 4154-	3917- Gas @3923-4094 4090-	3689- Gas @3710-3864 3863-	3908- Gas @3914-4087 4082-	5197- Gas @5239-5345 5381-	5198- Gas @5246-5312 5384-
QUEENSTON	3783-	3814-	3817-	3924-	4159-	4097-	3870-	4089-	5393-	5396-
TOTAL DEPTH	3860	3880	3890	4013	4220	4161	4164	4155	5473	5447
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	720 Mcf AF 910 psi/144 hrs. extension Indian Springs pool Conneaut field	787 Mcf AF 900 psi/16 hrs. extension Indian Springs pool Conneaut field	810 Mcf AF 900 psi/108 hrs. development Indian Springs pool Conneaut field	1,380 Mcf AF 1,080 psi/120 hrs. development Indian Springs pool Conneaut field	1,152 Mcf AF 1,160 psi/24 days extension Kastle pool Conneaut field	456 Mcf AF 960 psi/120 hrs. extension Kastle pool Conneaut field	226 Mcf AF 1,150 psi/158 hrs. development Indian Springs pool Conneaut field	465 Mcf AF 1,100 psi/40 hrs. development Kastle pool Conneaut field	2,264 Mcf AF 1,350 psi/72 hrs. development Kantz Corners field	839 Mcf AF 1,350 psi/72 hrs. development Kantz Corners field

COUNTY Permit Number	Crawford 21168	Crawford 21169	Crawford 21170	Crawford 21171	Crawford 21178	Crawford 21179	Crawford 21180	Crawford 21185	Crawford 21186	Crawford 21187
NAME OF WELL	Ronald Kalinowski #1	Paul Kahler #1	Albert Gallaher #8-1	Bernard Baranski #1	Vance Rung #2	Allan Hart #5	Steve Sturey #1	Neal Lang #1	Neal Lang #2	K. Frndak #1
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Mitchell Energy Corporation	Blackfoot Cherokee Goe Pro, Inc.	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cardinal Oil Company #1-3
TOWNSHIP	Fairfield	Union	Summerhill	Beaver	Fairfield	Fairfield	Wayne	Randolph	Randolph	Cussewago
QUADRANGLE & MAP NUMBER	Stoneboro C 36 **New Lebanon B	Meadville H 120 **Geneva F	Linesville B 84 **Harmonsburg D	Girard H 608 **Beaver Center	Meadville H 121 **Cochranton G	Meadville H 122 **Geneva I	Stoneboro C 42 **New Lebanon C	Townville D 45 **Sugar Lake A	Meadville F 123 **Cochranton C	Girard I 591 **Conneautville
LATITUDE	2,400 ft. S 41°30'00"	9,100 ft. S 41°35'00"	3,500 ft. S 41°42'30"	6,060 ft. S 41°50'00"	1,400 ft. S 41°32'30"	1,800 ft. S 41°32'30"	800 ft. S 41°30'00"	9,800 ft. S 41°37'30"	10,400 ft. S 41°37'30"	1,900 ft. S 41°50'00"
LONGITUDE	5,800 ft. W 80°02'30"	1,150 ft. W 80°07'30"	1,100 ft. W 80°20'00"	9,240 ft. W 80°22'30"	9,000 ft. W 80°05'00"	200 ft. W 80°07'30"	4,800 ft. W 80°00'00"	9,100 ft. W 79°57'30"	550 ft. W 80°00'00"	600 ft. W 80°15'00"
DATE COMPLETED	4-28-81	7-8-81	5-20-81	6-24-81	6-24-81	6-13-81	5-22-81	5-17-81	5-28-81	6-20-81
ELEVATION	1350 GR	1420 GR	1099 GR	1002 GR	1095 GR	1060 GR	1195 GR	1380 GR	1380 GR	1142 GR
TULLY	*3502-	*3293-	*2421-	2026-	*3070-	*2999-	*3350-	*3311-	*3303-	2206-
ONONDAGA LIMESTONE	3706-	3480-	2585-	2093-	3262-	3188-	3567-	3524-	3514-	2399-
ONONDAGA CHERT										
ORISKANY	3866-	3667-	2781-	2470-	3440-	3367-	3721-	3698-	3692-	2613-
HELDERBERG	3874-									
KEYSER-BASS ISLAND	3926-	3684-	2787-		3458-	3382-	3742-	3711-	3706-	2640-
SALINA	3991-	3768-	2862-	2724-	3556-	3472-	3858-	3800-	3794-	2696-
GUELPH-LOCKPORT	4650-	4390-	3460-	3040-	4172-	4146-	4506-	4424-	4403-	3254-
BLACK WATER										
CLINTON	5007-	4750-	3819-		4535-	4468-	4877-	4776-	4762-	*3514-
IRONDEQUOIT	5057-	4808-	3873-	3426-	4594-	4528-	4936-	4838-	4822-	3591-
MEDINA	5134- Gas @5172-5276	4857- Gas @4898-4995	3920- Gas @3922-4093	3466- Gas @3510-3555	4647- Gas @4651-4782	4578- Gas @4611-4789	4993- Gas @5006-5140	4888- Gas @4911-5021	4870- Gas @4883-4998	3624- Gas @3660-3753
WHIRLPOOL	5314-	5041-	4086-	3638-	4826-	4761-	5174-	5063-	5048-	3792-
QUEENSTON	5324-	5056-	4093-	3646-	4843-	4777-	5185-	5081-	5067-	3800-
TOTAL DEPTH	5468	5133	4158	3702	4906	4873	5267	5187	5136	3886
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	6,492 Mcf AF 1,425 psi/72 hrs. extension Kantz Corners field	1,283 Mcf AF 1,360 psi/72 hrs. extension Kantz Corners field	710 Mcf AF 1,050 psi/8 days development Indian Springs pool Conneaut field	1,600 Mcf AF 1,100 psi/2 hrs. development Stone Run pool Conneaut field	1,302 Mcf AF 1,425 psi/72 hrs development Kantz Corners field	1,143 Mcf AF 1,425 psi/72 hrs extension Kantz Corners field	1,660 Mcf AF 1,500 psi/72 hrs. development Cochranton field	286 Mcf AF 1,320 psi/72 hrs. extension Frenchtown field	1,164 Mcf AF 1,400 psi/72 hrs. extension Frenchtown field	109 Mcf AF 1,200 psi development Indian Springs pool Conneaut field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 21188	Crawford 21189	Crawford 21190	Crawford 21191	Crawford 21192	Crawford 21193	Crawford 21196	Crawford 21197	Crawford 21198	Crawford 21199
NAME OF WELL	Charles Frndak #1	Gerald Fuller #1	John Halko #1	James Rosier #1	John Taylor #2	E. Zitelli #1	Frances Sigsbee #1	Julius Brunot #1	Winston Jewell #1	Clyde W. Coldren #1
OPERATOR	Cardinal Oil Company #4	Cardinal Oil Company #2	Cardinal Oil Company #86	Cardinal Oil Company #5	Cardinal Oil Company #84	Cardinal Oil Company #85	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	Cussewago	Cussewago	Cussewago	Cussewago	Cussewago	Cussewago	East Fairfield	Randolph	Fairfield	Fairfield
QUADRANGLE & MAP NUMBER	Girard I 614 **Conneautville	Cambridge Spgs 111 **Edinboro South	Cambridge Spgs 11 **Edinboro South	Girard I 634 **Conneautville	Cambridge Spgs 152 **Edinboro South	Cambridge Spgs 153 **Edinboro South	Meadville H 113 **Cochranton D	Meadville F 144 **Cochranton C	Stoneboro B 43 **Hadley C	Meadville H 124 **Geneva I
LATITUDE	750 ft. S 41°50'00"	12,360 ft. S 41°52'30"	14,300 ft. S 41°50'00"	2,840 ft. S 41°50'00"	9,625 ft. S 41°50'00"	11,300 ft. S 41°50'00"	1,300 ft. S 41°35'00"	15,000 ft. S 41°37'30"	1,600 ft. S 41°30'00"	14,500 ft. S 41°32'30"
LONGITUDE	1,500 ft. W 80°15'00"	11,350 ft. W 80°12'30"	8,450 ft. W 80°12'30"	4,540 ft. W 80°15'00"	9,000 ft. W 80°12'30"	8,425 ft. W 80°12'30"	7,200 ft. W 80°05'00"	1,200 ft. W 80°00'00"	3,300 ft. W 80°07'30"	3,000 ft. W 80°07'30"
DATE COMPLETED	7-17-81	6-27-81	5-30-81	7-6-81	7-11-81	6-28-81	7-19-81	6-7-81	7-13-81	7-4-81
ELEVATION	1146 GR	1130 GR	1122 GR	1198 GR	1109 GR	1115 GR	1415 GR	1540 GR	1390 GR	1390 GR
TULLY	*2212-	*2168-	*2279-	*2265-	2242-	*2276-	*3202-	*3469-	*3432	
ONONDAGA LIMESTONE	2404-	2362-	*2467-	2454-	2430-	2466-	3394-	3682-	3614-	
ONONDAGA CHERT										
ORISKANY	2622-	2610-	*2661-	2666-	2620-	2661-	3578-	3861-	3786-	
HELDERBERG										
KEYSER-BASS ISLAND	2660-	2618-	*2670-	2704-	2658-	2696-	3592-	3877-	3800-	
SALINA	2702-	2682-	*2735-	2740-	2694-	2733-	3674-	3966-	3902-	
GUELPH-LOCKPORT	3260-	3242-	3362-	3302-	3298-	3334-	4300-	4584-	4592-	
BLACK WATER										
CLINTON	3534-	3508-	3600-	3594-	3590-	3630-	4668-	4940-	4963-	*4902-
IRONDEQUOIT	3605-	3582-		3646-		3681-	4728-	5005-	5021-	4960-
MEDINA	3640- Gas @3678-3723	3614- Gas @3667-3684	3738- Gas @3784-3829	3678- Gas @3724-3767	3674- Gas @3709-3781	3714- Gas @3751-3823	4767- Gas @4813-4877	5056- Gas @5070-5183	5080- Gas @5116-5229	5022- Gas @5057-5137
WHIRLPOOL	3810-	3785-		3850-		3888-	4955-	5230-	5262-	5200-
QUEENSTON	3820-	3794-	3832-	3860-	3844-	3896-	4969-	5249-	5276-	5216-
TOTAL DEPTH	3870	3855	3960	3971	3916	3953	5032	5334	5350	5291
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	1,064 Mcf AF 1,200 psi/3 days development Indian Springs pool Conneaut field	1,247 Mcf AF 1,350 psi/2 days extension Pageville pool Conneaut field	1,146 Mcf AF 1,150 psi/4 days development Indian Springs pool Conneaut field	1,105 Mcf AF 1,1140 psi/3 day development Indian Springs pool Conneaut field	1,506 Mcf AF 1,100 psi/3 days development Indian Springs pool Conneaut field	937 Mcf AF 1,000 psi/24 hrs. extension Indian Springs pool Conneaut field	332 Mcf AF 1,425 psi/74 hrs. extension Shaws Corners pool Kantz Corners field	300 Mcf AF 1,425 psi/72 hrs. extension Frenchtown field	1,360 Mcf AF 1,300 psi/72 hrs. extension Kantz Corners field	880 Mcf AF 1,330 psi/72 hrs. development Kantz Corners field

COUNTY Permit Number	Crawford 21203	Crawford 21204	Crawford 21205	Crawford 21207	Crawford 21208	Crawford 21209	Crawford 21210	Crawford 21212	Crawford 21213	Crawford 21214
NAME OF WELL	Carol Kennedy #1	Abbott-Sabella #1	James Hollabaugh #1	K. Ball #1	W. L. Dunn Construction #2	Paul Oygert #1	Joseph Gandziarski #1	Eli J. Troyer #1	Gary D. Moorhead #1	Lillian Reese #1
OPERATOR	Cabot Oil & Gas Corporation	Cardinal Oil Company	Cabot Oil & Gas Corporation	Cardinal Oil Company #6	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	Fairfield	Cussewago	Wayne	Spring	East Fairfield	East Fallowfield	Greenwood	East Fallowfield	Wayne	Wayne
QUADRANGLE & MAP NUMBER	Meadville I 130 Cochranton H	Girard F 615 Conneautville	Stoneboro C 44 New Lebanon C	Girard H 609 Beaver Center	Meadville I 125 Cochranton H	Linesville I 87 Conneaut Lake F	Geneva H 126 Geneva H	Linesville H 85 Conneaut Lake G	Townville G 46 Sugar Lake O	Meadville I 127 Cochranton I
LATITUDE	12,800 ft. S 41°32'30"	10,250 ft. S 41°52'30"	2,000 ft. S 41°30'00"	150 ft. S 41°50'00"	1,650 ft. S 41°32'30"	8,700 ft. S 41°35'00"	11,500 ft. S 41°32'30"	10,500 ft. S 41°32'30"	700 ft. S 41°35'00"	1,400 ft. S 41°32'30"
LONGITUDE	6,000 ft. W 80°02'30"	3,000 ft. W 80°15'00"	7,000 ft. W 80°00'00"	6,100 ft. W 80°22'30"	6,300 ft. W 80°02'30"	7,800 ft. W 80°15'00"	11,200 ft. W 80°07'30"	4,400 ft. W 80°20'00"	9,800 ft. W 79°57'30"	9,950 ft. W 80°00'00"
DATE COMPLETED	8-18-81	7-3-81	6-1-81	6-8-81	7-1-81	7-28-81	6-10-81	8-5-81	6-16-81	7-2-81
ELEVATION	1265 GR	1160 GR	1150 GR	866 GR	1400 GR	1200 GR	1350 GR	1055 GR	1420 GR	1390 GR
TULLY		*2172-	*3306-	*1860-	*3387-	*2938-	*3322-	*2776-	*3360-	*3435-
ONONDAGA LIMESTONE		2374-	3520-	2036-	3595-	3100-	3488-	2926-	3578-	3646-
ONONDAGA CHERT										
ORISKANY		2624-	3674-	2284-	3768-	3300-?	3668-	3120-	Absent	3814-
HELDERBERG										
KEYSER-BASS ISLAND		2644-	3690-	2300-	3787-	3309-	3688-	3130-	3753-	3836-
SALINA		2700-	3806-	2366-	3880-	3402-	3780-	3225-	3865-	3934-
GUELPH-LOCKPORT		3268-	4460-	2930-	4490-	4024-	4452-	3953-	4484-	4570-
BLACK WATER										
CLINTON		3526-	4819-	3200-	4883-	4378-	4810-	4254-	4836-	4929-
IRONDEQUOIT	*4924-?	3608-	4881-	3268-	4946-	4433-	4867-	4310-	4896-	4992-
MEDINA	4983- Gas @5039-5119	3642- Gas @3663-3764	4939- Gas @4981-5082	3298- Gas @3362-3477	5000- Gas @5013-5107	4484- Gas @4531-4586	4929- Gas @4963-5025	4360- Gas @4414-4464	4945- Gas @4982-5081	5048- Gas @5071-5175
WHIRLPOOL	5165-	3813-	5123-		5178-	4665-	5104-	4548-	5124-	5224-
QUEENSTON	5175-	3821-	5133-	3562-	5192-	4676-	5119-	4557-	5142-	5238-
TOTAL DEPTH	5267	3882	5188	3562	5281	4794	5220	4642	5228	5327
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	7,728 Mcf AF 1,450 psi/72 hrs. development Kantz Corners field	260 Mcf AF 700 psi/1 day development Pageville pool Conneaut field	876 Mcf AF 1,475 psi/72 hrs. extension Cochranton field	499 Mcf AF 1,040 psi/24 hrs. development Lundys Lane pool Conneaut field	1,164 Mcf AF 1,400 psi/72 hrs. development East Fairfield pool Kantz Corners field	875 Mcf AF 1,175 psi/72 hrs. extension Greenwood pool Geneva field	298 Mcf AF 1,320 psi/72 hrs. extension Kantz Corners field	1,100 Mcf AF 1,375 psi/72 hrs. Deeper pool test Adamsville pool Atlantic field	933 Mcf AF 1,220 psi/72 hrs. extension Frenchtown field	907 Mcf AF 1,425 psi/72 hrs. development Round Knob pool Kantz Corners field

Figure 32. *(Continued)*

COUNTY Permit Number	Crawford 21219	Crawford 21220	Crawford 21221	Crawford 21222	Crawford 21226	Crawford 21227	Crawford 21229	Crawford 21231	Crawford 21233	Crawford 21234
NAME OF WELL	Carmen Vazzana #1	White Unit #1-86	G. Renaud #1	G. Renaud #2	R. McClellan #1	Pressley Hilliard #1	Stanley Mathews #1	John Kort #2	Irving Greenlee-Paul Ingols #1	Robert Hartenbach #1
OPERATOR	Cabot Oil & Gas Corporation	Mitchell Energy Corporation	Gary W. Renaud 4-R Investment	Gary W. Renaud 4-R Investment	Berea Oil & Gas Corporation	Cabot Oil & Gas Corpoation	Cabot Oil & Gas Corporation	Cardinal Oil Company #12	Cardinal Oil Company #10	Goe Pro, Inc.
TOWNSHIP	Union	Cussewago	Venango	Venango	Woodcock	Wayne	Cambridge	Cussewago	Spring	Cussewago
QUADRANGLE & MAP NUMBER	Meadville H 131 **Geneva F	Cambridge Spgs 176 **Edinboro South	Cambridge Spgs 112 **Cambridge Spgs	Cambridge Spgs 113 **Cambridge Spgs	Meadville C 140 **Blooming Valley	Townville G 47 **Sugar Lake G	Cambridge Spgs 114 **Cambridge Spgs	Girard I 620 **Conneautville	Girard I 610 **Conneautville	Cambridge Spgs 138 **Edinboro South
LATITUDE	14,700 ft. S 41°35'00"	9,050 ft. S 41°50'00"	900 ft. S 41 50'00"	2,500 ft. S 41°50'00"	6,820 ft. S 41°45'00"	8,500 ft. S 41°32'30"	1,800 ft. S 41°50'00"	3,950 ft. S 41°50'00"	10,620 ft. S 41°50'00"	15,100 ft. S 41°52'30"
LONGITUDE	700 ft. W 80°07'30"	5,500 ft. W 80°12'30"	6,200 ft. W 80°05'00"	4,650 ft. W 80°05'00"	8,790 ft. W 80°02'30"	5,900 ft. W 79°57'30"	7,000 ft. W 80°02'30"	900 ft. W 80°15'00"	1,030 ft. W 80°17'30"	4,550 ft. W 80°10'00"
DATE COMPLETED	7-30-81	7-29-81	6-26-81	6-3-81	7-21-81	6-28-81	7-17-81	7-25-81	6-17-81	6-19-81
ELEVATION	1060 GR	1128 GR	1205 GR	1180 GR	1425 GR	1385 GR	1160 GR	1180 GR	1190 GR	1430 GR
TULLY	*2996-	*2302-		*2386-	2880-	*3500-	*2417-	*2244-	*2322-	2530-
ONONDAGA LIMESTONE	3185-	2492-	*2602-	2598-	3082-	3723-	3872-	2434-	2506-	2742-
ONONDAGA CHERT										
ORISKANY	3368-	Absent	Absent	Absent		3872-	Absent	2636-	2704-	
HELDERBERG										
KEYSER-BASS ISLAND	3386-	2710-	2830-	2816-		3896-	2842-	2678-	2722-	
SALINA	3472-	2770-	2896-	2884-	3530-	4004-	2912-	2712-	2772-	3342-
GUELPH-LOCKPORT	4175-	3314-	3430-	3413-	4030-	4686-	3458-	3304-	3344-	3582-
BLACK WATER										
CLINTON	4440-	3656-	3770-	3754-	4280-	5036-	3766-	3580-	3664-	3868-
IRONDEQUOIT	4522-	3709-	3827-	3810-	4356-	5107-	3850-	3650-	3720-	3978-
MEDINA	4579- Gas @4615-4705	3752- Gas @3764-3921	3867- Gas @3896-4039	3853- Gas @3875-4019	4390- Gas @4451-4570	5163- Gas @5216-5309	3898- Gas @3914-3979	3682- Gas @3724-3808	3754- Gas @3790-3844	4030- Gas @4055-4093
WHIRLPOOL	4756-	3914-	4032-	4015-	4565-	5340-	4056-	3848-	3926-	4178-
QUEENSTON	4772-	3922-	4042-	4023-	4581-	5350-	4065-	3862-	3936-	4190-
TOTAL DEPTH	4844	4001	4443	4026	4645	5440	4110	3920	3978	4257
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	1,000 Mcf AF 1,400 psi/72 hrs. development Kantz Corners field	543 Mcf AF 1,010 psi/? extension Indian Springs pool Conneaut field	2,721 Mcf AF 1,230 psi/48 hrs. development Cambridge Springs field	2,804 Mcf AF 1,130 psi/48 hrs. extension Cambridge Springs field	2,000 Mcf AF 1,150 psi/72 hrs. New pool discovery Woodcock pool Richmond Township field	1,264 Mcf AF 1,340 psi/72 hrs. extension Cochranton field	1,391 Mcf AF 1,200 psi/72 hrs. extension Cambridge Springs field	697 Mcf AF 1,050 psi/24 hrs. development Indian Springs pool Conneaut field	652 Mcf AF 1,130 psi/3 days development Indian Springs pool Conneaut field	815 Mcf AF 1,175 psi/2 hrs. New field discovery Cussewago field

COUNTY Permit Number		Crawford 21235	Crawford 21238	Crawford 21254	Crawford 21255	Crawford 21256	Crawford 21257	Crawford 21258	Crawford 21259	Crawford 21260	Crawford 21262
NAME OF WELL		Robert Hitchcock #1	K. & C. Zirkle #1	Lucile Ertman #1	Gerald Elliot #1	Zuzanna Gribus #2	Zuzanna Gribus #1	John Halko #2	F. & H. Bitenc #7	Richard Baker #1	Walter Bailly #1
OPERATOR		Goe Pro, Inc./ D/B/A Renaissance	Berea Oil & Gas Corporation	Cardinal Oil Company #16	Cardinal Oil Company #87	Cardinal Oil Company #15	Cardinal Oil Company #14	Cardinal Oil Company #88	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP		Cussewago	Richmond	Spring	Cussewago	Spring	Spring	Cussewago	Greenwood	Greenwood	Fairfield
QUADRANGLE & MAP NUMBER		Cambridge Spgs 119 **Edinboro South	Meadville C 159 **Blooming Valley	Girard I 616 **Conneautville	Girard I 617 **Conneautville	Girard I 618 **Conneautville	Girard I 619 **Conneautville	Cambridge Spgs 154 **Edinboro South	Meadville G 132 **Geneva H	Meadville G 128 **Geneva H	Stoneboro B 47 **Hadley C
LATITUDE		15,100 ft. S 41°52'30"	2,480 ft. S 41°45'00"	9,100 ft. S 41°50'00"	11,300 ft. S 41°50'00"	7,600 ft. S 41°50'00"	7,500 ft. S 41°50'00"	13,150 ft. S 41°50'00"	13,900 ft. S 41°32'30"	14,300 ft. S 41°32'30"	6,100 ft. S 41°30'00"
LONGITUDE		2,150 ft. W 80°10'00"	7,260 ft. W 80°00'00"	5,500 ft. W 80°15'00"	2,525 ft. W 80°15'00"	5,300 ft. W 80°15'00"	6,800 ft. W 80°15'00"	9,450 ft. W 80°12'30"	7,800 ft. W 80°10'00"	2,200 ft. W 80°10'00"	1,500 ft. W 80°07'30"
DATE COMPLETED		6-17-81	6-22-81	8-6-81	7-31-81	7-26-81	7-31-81	7-26-81	7-20-81	7-11-81	8-17-81
ELEVATION		1426 GR	1580 GR	1280 GR	1307 GR	1254 GR	1295 GR	1211 GR	1330 GR	1365 GR	1410 GR
TULLY		2512-	3084-	*2406-	*2452-	*2342-	*2374-	*2382-		*3325-	*3430-
ONONDAGA	LIMESTONE	2740-	3294-	2591-	2638-	2532-	2561-	2574-		3488-	3610-
	CHERT										
ORISKANY				2788-	2830-	2738-	2765-	2776-		3669-	3784-
HELDERBERG											
KEYSER-BASS ISLAND				2820-	2872-	2776-	2782-	2817-		3691-	3800-
SALINA		3330-	3720-	2860-	2910-	2804-	2834-	2845-		3788-	3902-
GUELPH-LOCKPORT		3713-	4200-	3446-	3500-	3392-	3405-	3443-		4462-	4618-
BLACK WATER											
CLINTON		3898-	4480-	3716-	3786-	3668-	3718-	3738-	*4755-	4818-	4992-
IRONDEQUOIT		3990-	4544-	3786-	3844-	3739-	3769-	3790-	4809-	4876-	5042-
MEDINA WHIRLPOOL		4012- Gas @4041-4130 4174-	4560- Gas @4676-4760 4746-	3818- Gas @3849-3945 3992-	3876- Gas @3927-3969 4052-	3770- Gas @3823-3856	3802- Gas @3841-3924 3970-	3822- Gas @3845-3912 3988-	4867- Gas @4898-4981 5049-	4932- Gas @4969-5075	5110- Gas @5154-5252 5294-
QUEENSTON		4194-	4762-	4002-	4062-		3982-	4002-	5065-		5308-
TOTAL DEPTH		4245	4846	4094	4120	4038	4038	4093	5163	5110	5382
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		800 Mcf AF 1,200 psi/2 hrs. extension Cussewago field	1,000 Mcf AF 1,250 psi/72 hrs New pool discovery Zirkle pool Richmond Township field	1,797 Mcf AF 1,150 psi/1 day development Indian Springs pool Conneaut field	581 Mcf AF 1,150 psi/3 days extension Indian Springs pool Conneaut field	177 Mcf AF 1,000 psi/3 days development Indian Springs pool Conneaut field	951 Mcf AF 800 psi/24 hrs. development Indian Springs pool Conneaut field	840 Mcf AF 1,150 psi/3 days , development Indian Springs pool Conneaut field	1,032 Mcf AF 1,385 psi/72 hrs. extension Rock Creek pool Geneva field	2,058 Mcf AF 1,380 psi/72 hrs. extension Kantz Corners field	907 Mcf AF 1,425 psi/72 hrs. extension Kantz Corners field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 21267	Crawford 21271	Crawford 21275	Crawford 21277	Crawford 21278	Crawford 21279	Crawford 21280	Crawford 21281	Crawford 21282	Crawford 21283
NAME OF WELL	Dale C. Lippert #1	Wagnercrest Farms #2	John Hepak, Jr #1	Phillip & Barbara Hausmann #1	Joseph, Paul & Mary Kulik #2	Henry & Katherine Rippert #3	Carl & Barbara Timko #1	Carl & Barbara Timko #2	James Barr #1	Elizabeth McFate #1
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Northwest Natural Gas Company	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	East Fairfield	East Fairfield	Spring	Spring	Spring	Spring	Spring	Spring	East Fairfield	East Fairfield
QUADRANGLE & MAP NUMBER	Meadville I 145 **Cochranton E	Meadville I 133 **Cochranton E	Girard 659 **Conneautville	Girard 660 **Conneautville	Girard 661 **Conneautville	Girard 662 **Conneautville	Girard 663 **Conneautville	Girard 664 **Conneautville	Meadville H 134 **Cochranton D	Meadville I 146 **Cochranton E
LATITUDE	11,400 ft. S 41°35'00"	5,800 ft. S 41°35'00"	13,950 ft. S 41°50'00"	11,400 ft. S 41°52'30"	10,950 ft. S 41°52'30"	12,400 ft. S 41°52'30"	4,100 ft. S 41°50'00"	4,100 ft. S 41°50'00"	1,300 ft. S 41°35'00"	9,800 ft. S 41°35'00"
LONGITUDE	5,200 ft. W 80°02'30"	8,600 ft. W 80°02'30"	7,850 ft. W 80°17'30"	2,600 ft. W 80°20'00"	1,350 ft. W 80°20'00"	9,350 ft. W 80°20'00"	8,700 ft. W 80°20'00"	7,250 ft. W 80°20'00"	3,900 ft. W 80°05'00"	7,100 ft. W 80°02'30"
DATE COMPLETED	9-18-81	8-12-81	6-29-81	7-10-81	7-18-81	8-3-81	8-15-81	8-20-81	7-26-81	8-28-81
ELEVATION	1370 GR	1330 GR	1160 GR	1140 GR	1145 GR	1100 GR	1100 GR	1150 GR	1520 GR	1290 GR
TULLY	*3373-		2152-	2126-	2108-	2100-	2116-	2170-	*3346-	*3276-
ONONDAGA LIMESTONE	3576-		2342-	2306-	2292-	2278-	2992-	2348-	3536-	3478-
ONONDAGA CHERT										
ORISKANY	3748-								3723-	3652-
HELDERBERG										
KEYSER-BASS ISLAND	3762-		2586-	2532-	2512-	2492-	2562-	2494-	3744-	3666-
SALINA	3856-		2660-	2579-	2542-	2566-	2618-	2528-	3829-	3758-
GUELPH-LOCKPORT	4450-		3147-	3180-	3160-	3163-	3180-	3237-	4448-	4358-
BLACK WATER										
CLINTON	4750-	*4682-	3484-	3428-	3400-	3400-	3536-	3502-	4816-	4710-
IRONDEQUOIT	4924-	4740-							4870-	4772-
MEDINA WHIRLPOOL	4936- Gas @4975-5069 5112-	4794- Gas @4834-4919	3564- Gas @3638-3668	3546- Gas @3570-3659	3526- Gas @3562-3623	3535- Gas @3570-3644	3546- Gas @3574-3649	3610- Gas @3640-3702	4920- Gas 4961-5049 5101-	4824- Gas @4865-4957 5004-
QUEENSTON	5132-								5118-	5021-
TOTAL DEPTH	5171	5055	3739	3671	3735	3728	3752	3751	5180	5096
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	852 Mcf AF 1,325 psi/72 hrs. development East Fairfield pool Kantz Corners field	4,290 Mcf AF 1,325 psi/72 hrs. development Shaws Corners pool Kantz Corners field	1,100 Mcf AF 1,025 psi/2 days development Lundys Lane pool Conneaut field	1,200 Mcf AF 1,005 psi/2 days development Lundys Lane pool Conneaut field	1,100 Mcf AF 1,015 psi/2 days development Lundy, Lane pool Conneaut field	1,200 Mcf AF 1,030 psi/2 days development Lundys Lane pool Conneaut field	1,250 Mcf AF 1,060 psi/2 days development Lundys Lane pool Conneaut field	1,200 Mcf AF 1,050 psi/2 days development Lundys Lane pool Conneaut field	984 Mcf AF 1,300 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	1,039 Mcf AF 1,350 psi/72 hrs. extension East Fairfield pool Kantz Corners field

COUNTY Permit Number		Crawford 21284	Crawford 21285	Crawford 21289	Crawford 21290	Crawford 21292	Crawford 21294	Crawford 21295	Crawford 21299	Crawford 21300	Crawford 21301
NAME OF WELL		Orville Maloney #1	Jerold E. Smith #1	Jennie Grinnell #2	John A. Hamilton #1	Clark S. Duncan #1	Merle Smith #1	Clyde Peterson #1	William R. Lutz #2	Payne #2	Taylor #3
OPERATOR		Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cardinal Oil Company #22	Cardinal Oil Company #24	Cardinal Oil Company #20
TOWNSHIP		East Fairfield	East Fairfield	Union	Wayne	East Fairfield	East Fairfield	Fairfield	Spring	Spring	Cussewago
QUADRANGLE & MAP NUMBER		Meadville I 160 **Cochranton E	Meadville I 147 **Cochranton E	Meadville H 129 **Geneva F	Meadville I 161 **Cochranton I	Meadville I 148 **Cochranton	Meadville I 149 **Cochranton H	Stoneboro B 52 **Hadley C	Girard I 621 **Conneautville	Girard 635 **Conneautville F	Cambridge Spgs 163 **Edinboro South
LATITUDE		2,200 ft. S 41°35'00"	9,200 ft. S 41°35'00"	9,200 ft. S 41°35'00"	11,300 ft. S 41°32'30"	7,600 ft. S 41°35'00"	3,800 ft. S 41°32'30"	6,300 ft. S 41°30'00"	7,600 ft. S 41°50'00"	3,740 ft. S 41°50'00"	10,600 ft. S 41°50'00"
LONGITUDE		4,800 ft. W 80°02'30"	3,900 ft. W 80°02'30"	10,300 ft. W 80°07'30"	5,300 ft. W 80°00'00"	6,400 ft. W 80°02'30"	300 ft. W 80°02'30"	4,600 ft. W 80°07'30"	10,925 ft. W 80°15'00"	7,760 ft. W 80°15'00"	10,540 ft. W 80°12'30"
DATE COMPLETED		8-9-81	9-30-81	7-20-81	9-29-81	9-5-81	9-3-81	9-7-81	7-16-81	8-27-81	8-13-81
ELEVATION		1210 GR	1310 GR	1405 GR	1355 GR	1295 GR	1260 GR	1450 GR	1245 GR	1210 GR	1330 GR
TULLY		*3106-		*3211-	*3448-	*3274-	*3304-	*3472-	*2330-	*2283-	*2476-
ONONDAGA	LIMESTONE	3308-		3393-	3666-	3478-	3512-	3644-	2514-	2474-	2664-
	CHERT										
ORISKANY		3492-		3591-	3817-	3652-	3682-	3816-	Absent	2678-	2862-
HELDERBERG											
KEYSER-BASS ISLAND		3508-		3602-	3844-	3671-	3703-	3830-	2712-	2687-	2896-
SALINA		3598-		3688-	4167-	3760-	3810-	3933-	2788-	2753-	2932-
GUELPH-LOCKPORT				4327-	4618-	4344-	4444-	4657-	3398-	3352-	3522-
BLACK WATER											
CLINTON		4552-	*4736-	4704-	4992-	4696-	4813-	5034-	3670-	3616-	3814-
IRONDEQUOIT		4609-	4795-	4760-	5054-	4757-	4866-	5090-	3738-	3667-	3866-
MEDINA		4664- Gas @4701-4792	4850- Gas @4899-4986	4812- Gas @4855-4914	5108- Gas @5162-5252	4808- Gas @4850-4956	4914- Gas @4965-5048	5150- Gas @5174-5301	3776- Gas @3800-3852	3701- Gas @3739-3810	3898- Gas @3924-3988
WHIRLPOOL		4840-	5027-	4993-	5289-	4990-	5100-	5337-	3947-		4071-
QUEENSTON		4858-	5044-	5010-	5299-	5007-	5113-	5350-	3954-	3881-	4080-
TOTAL DEPTH		4938	5086	5097	5367	5072	5185	5427	4060	3972	4133
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		1,476 Mcf AF 1,375 psi/72 hrs. development Shaws Corners pool Kantz Corners field	933 Mcf AF 1,200 psi/72 hrs. development East Fairfield pool Kantz Corners field	189 Mcf AF 1,200 psi/72 hrs. extension Barco pool Kantz Corners field	1,032 Mcf AF 1,425 psi/72 hrs. extension Cochranton field	1,200 Mcf AF 1,420 psi/72 hrs. development Shaws Corners pool Kantz Corners field	2,200 Mcf AF 1,224 psi/72 hrs. extension Round Knob pool Kantz Corners field	1,700 Mcf AF 1,350 psi/72 hrs. development Kantz Corners field	2,883 Mcf AF 1,100 psi/4 days development Indian Springs pool Conneaut field	1,462 Mcf AF 1,090 psi/3 days development Indian Springs pool Conneaut field	893 Mcf AF 1,125 psi/1 day development Indian Springs pool Conneaut field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 21302	Crawford 21303	Crawford 21305	Crawford 21307	Crawford 21308	Crawford 21310	Crawford 21311	Crawford 21312	Crawford 21313	Crawford 21314
NAME OF WELL	Zitelli #2	Joseph & Barbara Niedermeyer #2	Knapp #1	Roy Douthitt #1	Hauser #1	Peterson #1	Margaret Lippert #3	Virgil Roche #1	Winston Jewell #2	Kebert Developers #A-1
OPERATOR	Cardinal Oil Company #21	Northwest Natural Gas Company	Northwest Natural Gas Company	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	Cussewago	Spring	Spring	East Fairfield	East Fairfield	East Fairfield	East Mead	East Mead	Fairfield	Greenwood
QUADRANGLE & MAP NUMBER	Cambridge Spgs 164 **Edinboro South	Girard 665 **Conneautville	Girard 666 **Conneautville E	Meadville H 135 **Cochranton D	Meadville 150 **Cochranton E	Meadville 141 **Cochranton D	Meadville 162 **Cochranton E	Meadville 151 **Cochranton B	Stoneboro 53 **Hadley C	Meadville 142 **Geneva H
LATITUDE	11,920 ft. S 41°50'00"	9,900 ft. S 41°50'00"	9,800 ft. S 41°50'00"	2,000 ft. S 41°35'00"	12,000 ft. S 41°35'00"	3,200 ft. S 41°35'00"	1,250 ft. S 41°35'00"	14,600 ft. S 41°37'30"	2,000 ft. S 41°30'00"	3,900 ft. S 41°32'30"
LONGITUDE	10,060 ft. W 80°12'30"	150 ft. W 80°20'00"	8,050 ft. W 80°17'30"	1,300 ft. W 80°05'00"	2,400 ft. W 80°02'30"	5,400 ft. W 80°05'00"	7,400 ft. W 80°02'30"	6,000 ft. W 80°02'30"	1,000 ft. W 80°07'30"	8,100 ft. W 80°10'00"
DATE COMPLETED	8-19-81	9-2-81	8-26-81	8-22-81	9-23-81	8-28-81	8-17-81	8-17-81	9-14-81	8-12-81
ELEVATION	1325 GR	1200 GR	1180 GR	1490 GR	1430 GR	1440 GR	1225 GR	1220 GR	1390 GR	1270 GR
TULLY	*2486-	2320-	2300-	*3353-		*3269-		*3072-		*3158-
ONONDAGA LIMESTONE	2672-	2498-	2482-	3546-		3458-		3272-		3323-
ONONDAGA CHERT										
ORISKANY	2864-			3734-		3640-		3455-		3522-
HELDERBERG										3532-
KEYSER-BASS ISLAND	2904-	2730-	2750-	3753-		3660-		3476-		
SALINA	2940-	2776-	2818-	3835-		3742-		3564-		3819-
GUELPH-LOCKPORT BLACK WATER	3540-	2374-	3358-			4360-		4198-		4259-
CLINTON	3834-	3624-	3606-		*4900-	4726-	*4593-	4540-	*4950-	4623-
IRONDEQUOIT	3887-				4955-	4781-	4648-	4600-	5009-	4678-
MEDINA WHIRLPOOL	3920- Gas @3946-4009 3990-	3752- Gas @3785-3838	3724- Gas @3765-3818	Gas @4953-5030	5002- Gas @5053-5150 5190-	4831- Gas @4869-4961 5012-	4700- Gas @4735-4828 4880-	4651- Gas @4689-4793 4830-	5060- Gas @5105-5185 5247-	4740- Gas @4798-4864 4916-
QUEENSTON	4100-				5206-	5020-	4896-	4848-	5261-	4932-
TOTAL DEPTH	4175	3943	3856	5151	5217	5102	4940	4912	5303	4986
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	552 Mcf AF 1,150 psi/1 day development Indian Springs pool Conneaut field	950 Mcf AF 1,060 psi/2 days development Lundys Lane pool Conneaut field	1,150 Mcf AF 1,075 psi/2 days development Indian Springs pool Conneaut field	984 Mcf AF 1,425 psi/72 hrs. development Shaws Corner pool Kantz Corners field	3,714 Mcf AF 1,225 psi/72 hrs. development East Fairfield pool Kantz Corners field	1,100 Mcf AF 1,330 psi/72 hrs. development Shaws Corners pool Kantz Corners field	1,205 Mcf AF 1,300 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	2,500 Mcf AF 1,320 psi/72 hrs. extension Papenfuse field	4,378 Mcf AF 1,275 psi/72 hrs. development Kantz Corners field	1,245 Mcf AF 1,400 psi/72 hrs. extension Greenwood pool Geneva field

COUNTY Permit Number	Crawford 21315	Crawford 21316	Crawford 21317	Crawford 21318	Crawford 21319	Crawford 21320	Crawford 21321	Crawford 21322	Crawford 21328	Crawford 21329
NAME OF WELL	Kebert Developers #A-3	John L. Burger #1	Carrolls Nursery #1	George Everett #1	Margaret Lippert #2	John Rynd #2	John Schmucker #1	Frank Schreck #1	Charles Bish #1	Meadville Redi-Mix #2
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	Greenwood	Union	Wayne	Wayne	Wayne	Wayne	Wayne	East Fairfield	East Fairfield	East Fairfield
QUADRANGLE & MAP NUMBER	Meadville 143 **Geneva G	Meadville H 136 **Geneva F	Meadville 163 **Cochranton I	Meadville 164 **Cochranton I	Meadville 166 **Cochranton I	Meadville 152 **Cochranton I	Meadville 153 **Cochranton I	Meadville 154 **Cochranton D	Meadville 165 **Cochranton H	Meadville 155 **Cochranton H
LATITUDE	4,800 ft. S 41°32'30"	11,500 ft. S 41°35'00"	13,850 ft. S 41°32'30"	13,000 ft. S 41°32'30"	8,500 ft. S 41°32'30"	14,900 ft. S 41°32'30"	11,300 ft. S 41°32'30"	3,150 ft. S 41°35'00"	9,800 ft. S 41°35'00"	500 ft. S 41°32'30"
LONGITUDE	5,000 ft. W 80°12'30"	10,500 ft. W 80°07'30"	1,100 ft. W 80°00'00"	3,500 ft. W 80°00'00"	10,900 ft. W 80°00'00"	8,600 ft. W 80°00'00"	1,800 ft. W 80°00'00"	9,800 ft. W 80°05'00"	5,700 ft. W 80°05'00"	8,400 ft. W 80°02'30"
DATE COMPLETED	8-22-81	8-18-81	10-11-81	10-8-81	8-28-81	9-6-81	9-18-81	9-23-81	9-4-81	9-14-81
ELEVATION	1320 GR	1320 GR	1330 GR	1360 GR	1130 GR	1060 GR	1060 GR	1100 GR	1250 GR	1325 GR
TULLY	3221-	*3162-	*3464-	*3489-	*3212-	3192-				
ONONDAGA LIMESTONE	3384-	3340-	3684-	3708-	3425-	3414-				
CHERT										
ORISKANY	3583-	3537-	3834-	3858-	3587-	3566-				
HELDERBERG	3593-					3588-				
KEYSER-BASS ISLAND		3552-	3856-	3882-	3612-					
SALINA	3880-	3638-	3967-	3986-	3709-	3814-				
GUELPH-LOCKPORT	4320-	4270-	4704-	4666-	4372-	4354-				
BLACK WATER										
CLINTON	*4628-	4642-	5000-	5030	4731-	4720-	*5101-	*4360-	*4621-	*4814-
IRONDEQUOIT	4691-	4699-	5063-	5092	4790-	4834-	5154-	4417-	4679-	4873-
MEDINA	4750- Gas @4778-4850	4753- Gas @4790-4893	5122- Gas @5175-5265	5150- Gas @5192-5290	4847- Gas @4855-4986	4844- Gas @4887-4976	5205- Gas @5262-5359	4466- Gas @4510-4600	4736- Gas @4778-4846	4920- Gas @4970-5057
WHIRLPOOL	4927-	4938-	5300-	5329-	5027-	5016-	5393-	4648-	4914-	5108-
QUEENSTON	4942-	4953-	5310-	5339-	5038-	5026-	5404-	4664-		5124-
TOTAL DEPTH	5000	5026	5380	5393	5116	5082	5448	4740	4986	5135
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	907 Mcf AF RP not available development Greenwood pool Geneva field	1,200 Mcf AF 1,275 psi/72 hrs extension Barco pool Kantz Corners field	1,200 Mcf AF 1,350 psi/72 hrs development Cochranton field	1,008 Mcf AF 1,425 psi/72 hrs development Cochranton field	1,500 Mcf AF 1,250 psi/72 hrs. development Cochranton field	3,684 Mcf AF 1,425 psi/72 hrs. development Cochranton field	1,700 Mcf AF 1,250 psi/72 hrs extension Cochranton field	1,426 Mcf AF 1,250 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	604 Mcf AF 1,275 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	2,100 Mcf AF 1,300 psi/72 hrs. development East Fairfield pool Kantz Corners field

Figure 32. (Continued)

COUNTY Permit Number	Crawford 21332	Crawford 21333	Crawford 21338	Crawford 21341	Crawford 21343	Crawford 21345	Crawford 21349	Crawford 21354	Crawford 21355	Crawford 21356
NAME OF WELL	Jennie Grinnell #1	Vernon L. Mahan #1	John & Billie Grunden #2	Benisch #1	J. & D. Hollenbeck #1	D. & D O'Donnel #1	Halko #4	Bunting #3	Koscis #2	Petrus #2
OPERATOR	Cabot Oil & Gas Corporation	Meridian Exploration #570	Northwest Natural Gas Company	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Cardinal Oil Company #32	Cardinal Oil Company #26	Cardinal Oil Company #29	Cardinal Oil Company #41
TOWNSHIP	Union	Cambridge	Spring	Summerhill	Summerhill	Summerhill	Cussewago	Spring	Spring	Spring
QUADRANGLE & MAP NUMBER	Meadville H 137 **Gevena F	Cambridge Spgs 165 **Cambridge Spgs	Girard 667 **Conneautville A	Linesville 86 **Harmonsburg B	Linesville 88 **Harmonsburg E	Linesville 89 **Harmonsburg F	Cambridge Spgs 166 **Edinboro South	Girard 636 **Conneautville E	Girard 637 **Conneautville B	Girard 638 **Conneautville C
LATITUDE	14,800 ft. S 41°35'00"	7,900 ft. S 41°50'00"	13,100 ft. S 41°52'30"	12,600 ft. S 41°45'00"	1,250 ft. S 41°42'30"	1,350 ft. S 41°42'30"	12,980 ft. S 41°50'00"	2,500 ft. S 41°50'00"	12,500 ft. S 41°52'30"	10,120 ft. S 41°52'30"
LONGITUDE	7,000 ft. W 80°07'30"	3,000 ft. W 80°02'30"	6,550 ft. W 80°20'00"	1,500 ft. W 80°17'30"	11,350 ft. W 80°15'30"	6,500 ft. W 80°15'00"	8,100 ft. W 80°12'30"	7,500 ft. W 80°17'30"	10,800 ft. W 80°17'30"	10,500 ft. W 80°15'00"
DATE COMPLETED	8-10-81	8-5-81	8-4-81	8-15-81	8-30-81	8-22-81	8-24-81	8-26-81	8-31-81	8-24-81
ELEVATION	1100 GR	1140 GR	1125 GR	1311 GR	1361 GR	1402 GR	1130 GR	1170 GR	1142 GR	1154 GR
TULLY	*3008-	*2428-	2134-	*2626-	*2692-	*2762-	*2302-	*2254-	*2142-	*2148-
ONONDAGA LIMESTONE	3190-	2635-	2316-	2796-	2858-	2933-	2490-	2440-	2328-	2346-
ONONDAGA CHERT										
ORISKANY	3376-	Bois Blanc - 2794		2996-	3054-	3129-	2680-	Absent	2520-	2594-
HELDERBERG									2532-	
KEYSER-BASS ISLAND	3393-	2833-	2644-	3004-	3070-	3140-	2720-	2618-	2585-	2636-
SALINA	3480-	2904-	2700-	3078-	3133-	3208-	2758-	2642-	2652-	2672-
GUELPH-LOCKPORT	4121-	3495-	3202-	3668-	3744-	3812-	3368-	3274-	3205-	3235-
BLACK WATER										
CLINTON	4486-	3756-	3456-	4014-	4084-	4155-	3660-	3548-	3478-	3538-
IRONDEQUOIT	4540-	3841-		4069-	4138-	4209-	3715-	3615-	3545-	3586-
MEDINA	4594- Gas @4634-4730	3892- Gas @3915-3985	3571- Gas @3600-3654	4110- Gas @4111-4290	4181- Gas @4191-4362	4251- Gas @4259-4431	3748- Gas @3785-3839	3647- Gas @3699-3731	3576- Gas @3612-3666	3618- Gas @3656-3756
WHIRLPOOL	4775-	4044-		4282-	4355-	4418-	3919-	3819-	3752-	3790-
QUEENSTON	4789-	4057-		4292-	4363-	4432-	3925-	3826-	3760-	3798-
TOTAL DEPTH	4856	4139	3765	4371	4433	4528	3972	3922	3836	3850
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	880 Mcf AF 1,360 psi/72 hrs. development Mt. Pleasant Road pool Kantz Corners field	140 Mcf AF 1,220 psi/7 days extension Cambridge Springs field	850 Mcf AF 1,005 psi/2 days development Lundys Lane pool Conneaut field	780 Mcf AF 1,110 psi/40 hrs. extension Indian Springs pool Conneaut field	480 Mcf AF 1,080 psi/64 hrs. development Indian Springs pool Conneaut field	256 Mcf AF 1,000 psi/114 hrs. development Indian Springs pool Conneaut field	1,579 Mcf AF 1,050 psi/3 days development Indian Springs pool Conneaut field	23 Mcf AF 750 psi/3 days development Lundys Lane pool Conneaut field	3,244 Mcf AF 1,050 psi/3 days development Lundys Lane pool Conneaut field	1,187 Mcf AF 1,075 psi/1 day development Pageville pool Conneaut field

COUNTY Permit Number	Crawford 21358	Crawford 21359	Crawford 21360	Crawford 21365	Crawford 21367	Crawford 21368	Crawford 21371	Crawford 21373	Crawford 21378	Crawford 21391
NAME OF WELL	M. Biernacki #1-98	L. M. Chapin #1	R. & R. Steider #1	Joseph Gribus #1	Vernon L. Mahan #2	Vernon L. Mahan #3	Delilah Bell #1	Dersch #2	Cecil Saeger #1	Robert Freyermuth #1-S
OPERATOR	Mitchell Energy Corporation	Mitchell Energy Corporation	Mitchell Energy Corporation	Cardinal Oil Company #36	Meridian Exploration #584	Meridian Exploration #583	Cabot Oil & Gas Corporation	Cardinal Oil Company #42	Meridian Exploration #588	Cabot Oil & Gas Corporation
TOWNSHIP	Cussewago	Summerhill	Summerhill	Spring	Cambridge	Cambridge	East Fairfield	Spring	Rockdale	East Fairfield
QUADRANGLE & MAP NUMBER	Cambridge Spgs 175 **Edinboro South	Linesville 90 **Harmonsburg 8	Linesville 91 **Harmonsburg E	Girard 1 622 **Conneautville	Cambridge Spgs 183 **Cambridge Spgs	Cambridge Spgs 184 **Cambridge Spgs	Meadville 1 138 **Cochranton E	Girard 639 **Conneautville C	Union City 200 **Millers Station	Meadville 1 139 **Cochranton E
LATITUDE	7,250 ft. S 41°50'00"	12,400 ft. S 41°45'00"	1,000 ft. S 41°42'30"	12,600 ft. S 41°50'00"	3,900 ft. S 41°50'00"	6,700 ft. S 41°50'00"	8,000 ft. S 41°35'00"	11,450 ft. S 41°52'30"	10,850 ft. S 41°50'00"	8,500 ft. S 41°35'00"
LONGITUDE	9,300 ft. W 80°12'30"	6,550 ft. W 80°17'30"	4,300 ft. W 80°17'30"	575 ft. W 80°17'30"	1,100 ft. W 80°02'30"	3,800 ft. W 80°02'30"	8,800 ft. W 80°02'30"	10,500 ft. W 80°15'00"	2,300 ft. W 79°57'30"	11,300 ft. W 80°02'30"
DATE COMPLETED	8-6-81	9-17-81	9-11-81	8-13-81	9-28-81	10-6-81	8-19-81	8-31-81	10-15-81	8-5-81
ELEVATION	1130 GR	1352 GR	1300 GR	1215 GR	1140 GR	1140 GR	1365 GR	1140 GR	1180 GR	1380 GR
TULLY	*2236-	*2657-	*2636-	*2360-	*2434-	*2430-		*2122-	*2554-	
ONONDAGA LIMESTONE	2424-	2822-	2799-	2542-	2650-	2640-		2322-	2770-	
ONONDAGA CHERT										
ORISKANY	2629-?	3016-	2996-	2744-	Absent	Absent		2513-	Absent	
HELDERBERG								2530-		
KEYSER-BASS ISLAND	2636-	3025-	3005-	2780-	2856-	2838-		2586-	2953-	
SALINA	2702-	3096-	3076-	2818-	2923-	2908-		2656-	3022-	
GUELPH-LOCKPORT	3242-	3698-	3690-	3406-	3459-	3430-		3226-	3558-	
BLACK WATER										
CLINTON	3583-	4046-	4038-	3694-	3797-	3758-	*4801-	3520-	3910-	*4760-
IRONDEQUOIT	3637-	4101-	4093-	3748-	3853-	3844-	4861-	3574-	3969-	4815-
MEDINA	3673- Gas @3678-3846	4142- Gas @4149-4324	4134- Gas @4140-4313	3782- Gas @3830-3864	3891- Gas @3936-3968	3892- Gas @3923-3972	4915- Gas @4955-5053	3606- Gas @3648-3682	4014- Gas @4067-4100	4869- Gas @4915-4994
WHIRLPOOL	3840-	4319-	4305-	3955-	4057-	4049-	5096-	3780-	4176-	5049-
QUEENSTON	3851-	4325-	4314-	3962-	4068-	4059-	5110-	3786-	4188-	5064-
TOTAL DEPTH	3914	4381	4382	4067	4068	4165	5236	3865	4279	5086
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	362 Mcf AF 1,090 psi/72 hrs. development Indian Springs pool Conneaut field	527 Mcf AF 1,210 psi/80 hrs. development Indian Springs pool Conneaut field	512 Mcf AF 1,010 psi/136 hrs. development Indian Springs pool Conneaut field	388 Mcf AF 525 psi/24 hrs. development Indian Springs pool Conneaut field	219 Mcf AF 1,260 psi/7 days development Cambridge Springs field	172 Mcf AF 1,230 psi/7 days development Cambridge Springs field	1,200 Mcf AF 1,350 psi/72 hrs. extension Shaws Corners pool Kantz Corners field	200 Mcf AF 900 psi/24 hrs. development Indian Springs pool Conneaut field	767 Mcf AF 1,250 psi/7 days development Rockdale field	1,055 Mcf AF 1,450 psi/72 hrs. development Shaws Corners pool Kantz Corners field

Figure 32. *(Continued)*

COUNTY Permit Number	Crawford 21396	Crawford 21398	Crawford 21400	Crawford 21424	Crawford 21428	Crawford 21454	Erie 20594	Erie 20609	Erie 20610	Erie 20611
NAME OF WELL	David W. Clark #1	Slomski #1	R. & C. Morrison #1	John A. Allison #1	H. Russell Hudson #1	Lyle B. Stevens #1	North East Service Plaza, #1	James A. Bernet #2	James A. Bernet #2	James A. Bernet #3
OPERATOR	Cabot Oil & Gas Corporation	Cardinal Oil Company #54	Northwest Natural Gas Company	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	JAB Enterprises, Inc.	JAB Enterprises, Inc.	JAB Enterprises, Inc.	JAB Enterprises, Inc.
TOWNSHIP	Greenwood	Cussewago	Spring	Greenwood	East Fairfield	East Fairfield	North East	North East	North East	North East
QUADRANGLE & MAP NUMBER	Stoneboro 48 **Hadley B	Cambridge Spgs 16 **Edinboro South	Girard 668 **Conneautville A	Meadville 167 **Geneva I	Meadville 156 **Cochranton E	Meadville 168 **Cochranton	North East C 328 **North East C	North East B 331 **North East C	North East B 329 **North East C	North East B 330 **North East C
LATITUDE	1,700 ft. S 41°30'00"	6,125 ft. S 41°50'00"	10,200 ft. S 41°52'30"	8,700 ft. S 41°32'30"	11,000 ft. S 41°35'00"	4,400 ft. S 41°35'00"	5,050 ft. S 42°15'00"	11,820 ft. S 42°15'00"	13,650 ft. S 42°15'00"	13,300 ft. S 42°15'00"
LONGITUDE	2,000 ft. W 80°10'00"	8,750 ft. W 80°12'30"	8,850 ft. W 80°20'00"	10,500 ft. W 80°07'30"	8,700 ft. W 80°02'30"	2,250 ft. W 80°05'00"	8,850 ft. W 79°45'00"	6,300 ft. W 79°47'30"	7,200 ft. W 79°47'30"	5,800 ft. W 79°47'30"
DATE COMPLETED	9-3-81	9-1-81	9-22-81	10-1-81	10-3-81	10-30-81	8-25-78	10-8-78	10-19-78	11-8-78
ELEVATION	1375 GR	1115 GR	1090 GR	1350 GR	1310 GR	1480 GR	790 KB	820 GR	835 GR	840 GR
TULLY	*3352-	*2219-	2072-	3325-	*3284-	*3358-	1155-	1251-	1272-	1252-
ONONDAGA LIMESTONE	3514-	2410-	2246-	3505-	3486-	3553-	1350-	1452-	1479-	1450-
ONONDAGA CHERT								-1660		
ORISKANY	3694-	2615-		3635-	Absent	3733-		Absent	Absent	
HELDERBERG				3655-				Absent	Absent	
KEYSER-BASS ISLAND	3708-	2631-	2500-		3660-	3752-	1509-1665	1660-1810	1665-1815	1662-1821
SALINA	3806-	2686-	2556-	4003-	3764-	3832-	1665-	1810-	1815-	1821-
GUELPH-LOCKPORT		3268-	3104-	4440-	4372-	4450-	2132-	2260-	2255-	2258-
BLACK WATER										
CLINTON		3556-	3348-	*4776-	4731-	4764-	2340-2430	2465-	2490-	2500-
IRONDEQUOIT		3627-		4835-	4790	4853-	2430-2456	2522-2552	2540-	2550-2594
MEDINA WHIRLPOOL	Gas @5023-5114	3658- Gas @3692-3748 3833-	3458- Gas @3520-3599	4892- Gas @4922-5033 5074-	4843- Gas @4897-4988 5021-	4903- Gas @4954-5040 5084-	2456- Gas @2479-2614 2590-	2552- Gas @2570-2703 2690-2706	2570- Gas @2592-2720 2706-	2594- Gas @2599-2735 2716-
QUEENSTON		3840-		5089-	5039-	5100-	2618-	2706-	2724-	2738-
TOTAL DEPTH	5205	3922	3698	5166	5165	5215	2650	2706	2775	2765
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	1,205 Mcf AF 1,375 psi/72 hrs. extension Kantz Corners field	685 Mcf AF 1,100 psi/2 days development Indian Springs pool Conneaut field	900 Mcf AF 1,015 psi/2 days development Lundys Lane pool Conneaut field	1,700 Mcf AF 1,400 psi/72 hrs. development Kantz Corners field	1,122 Mcf AF 1,300 psi/72 hrs. development East Fairfield pool Kantz Corners field	2,000 Mcf AF 1,250 psi/72 hrs. development Kantz Corners field	2,475 Mcf AF 798 psi/48 hrs. development Orchard Beach pool North East field	678 Mcf AF 789 psi/48 hrs. development Orchard Beach pool North East field	1,237 Mcf AF 832 psi/48 hrs. development Orchard Beach pool North East field	1,463 Mcf AF 865 psi/48 hrs. development Orchard Beach pool North East field

COUNTY Permit Number		Erie 20615	Erie 20624	Erie 20625	Erie 20686	Erie 20695	Erie 20696	Erie 20811	Erie 20861	Erie 20871	Erie 20878
NAME OF WELL		Happy Homes #1	Donald Geertson #1	Gordon Ward #1	R. Anderson #1-A	Paul & Nina Warner #1	Ronald & Penelope Ethridge #1	Lent & Gerald Orton #1	K. J. & G. Nasvytis #1	F. O. & J. Merritt #1	Old Central #1
OPERATOR		JAB Enterprises, Inc.	Reliance Management Company	Union Drilling, Inc. #669	Envirogas, Inc.	N.E.A. Cross Company	N.E.A. Cross Company	Hanley & Bird	Taurus Oil & Gas Company	Taurus Oil & Gas Company	Harborcreek School District
TOWNSHIP		Waterford	Union	LeBoeuf	North East	LeBoeuf	LeBoeuf	Venango	Conneaut	Conneaut	Harborcreek
QUADRANGLE & MAP NUMBER		Union City A 145 **Waterford A	Union City E 143 **Waterford I	Union City E 144 **Waterford I	North East C 332 **North East E	Union City E 110 **Waterford I	Union City E 111 **Waterford I	North East H 323 **Hammett F	Girard D 569 **Beaver Center B	Girard D 570 **Beaver Center B	North East D 333 **Harborcreek H
LATITUDE		12,100 ft. S 42°00'00"	9,550 ft. S 41°55'00"	11,550 ft. S 41°55'00"	11,500 ft. S 42°12'30"	7,900 ft. S 41°55'00"	8,200 ft. S 41°55'00"	490 ft. S 42°05'00"	2,050 ft. S 41°52'30"	500 ft. S 41°52'30"	3,150 ft. S 42°10'00"
LONGITUDE		10,400 ft. W 79°57'30"	1,650 ft. W 79°52'30"	6,425 ft. W 79°52'30"	7,100 ft. W 79°47'30"	6,500 ft. W 79°52'30"	3,800 ft. W 79°52'30"	4,275 ft. W 79°52'30"	2,450 ft. W 80°25'00"	2,550 ft. W 80°25'00"	10,750 ft. W 79°55'00"
DATE COMPLETED		10-1-78	10-19-79	10-24-79	1-18-79	3-12-79	3-21-79	9-22-79	9-25-79	10-26-79	9-24-79
ELEVATION		1280 GR	1315 GR	1328 GR	1265 GR	1274 KB	1263 KB	1499 KB	870 GR	910 GR	885 GR
TULLY		2276-		*2513-	1785-	*2438-	*2456-	*2240-	*1764-		1312-
ONONDAGA	LIMESTONE	2503-	2763-	2742-	1540-	2672-	2692-	2474-	1930-	1946-	1540-
	CHERT										
ORISKANY						Absent	Absent	2669-	Absent		Absent
HELDERBERG								2681-			
KEYSER-BASS ISLAND		2630-		2970-		2909-	2924-	2741-	2195-		
SALINA		2864-		3081-		2977-	2992-	2795-	2270-		2217-
GUELPH-LOCKPORT BLACK WATER		3190-		3563-	2743-	3480-	3480-	3182-	2798-		
CLINTON		3430-3525		3870-		3800-	3808-	3463-	3090-		
IRONDEQUOIT		3525-	3946-	3952-	3060-	3856-	3876-	3511-	3142-	3162-	2570-
MEDINA WHIRLPOOL		3576- Gas @3591-3724 3710-	4014- Gas @4017-4064 4140-	3976- Gas @4062-4104 4150-	3091- 3230-	3900- Gas @3962-4062 4054-	3912- Gas @3982-4078 4072-	3532- Gas @3579-3700 3689-	3174- Gas @3227-3255 3333-	3207- Gas @3211-3273 3355-	2590- Gas @2626-2760 2646-
QUEENSTON		3727-	4152-	4162-	3248-	4064-	3782-	3702-	3348-	3368-	2753-
TOTAL DEPTH		3727	4228	4228	3323	4138	4125	3775	3364	3400	2818
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		2,159 Mcf AF 1,110 psi/24 hrs. extension Talcott pool Erie field	516 Mcf AF 1,050 psi/48 hrs. development New Ireland field	510 Mcf AF 1,200 psi/48 hrs. development New Ireland field	Not tested Orchard Beach pool North East field	2,400 Mcf AF 1,200 psi/10 days development New Ireland field	1,000 Mcf AF 1,180 psi/10 days development New Ireland field	Open flow not taken 1,050 psi/5 days development Hornby pool North East field	2,300 Mcf AF 890 psi/7 days development Bushnell-Lexington pool Conneaut field	1,500 Mcf AF 650 psi/7 days development Bushnell-Lexington pool Conneaut field	820 Mcf AF 805 psi/48 hrs. development Harborcreek pool North East field

Figure 32. (Continued)

COUNTY Permit Number	Erie 20889	Erie 20916	Erie 20922	Erie 20935	Erie 20936	Erie 20937	Erie 20938	Erie 20942	Erie 20986	Erie 20987
NAME OF WELL	Ladd Farm #1	Oonald Slaughenhaupt #2	Old Central #2	E. & R. Gollmer #1	M. & A. Neal #1	L. & E. Gollmar #1	K. & M. Raymond #1	James Hall #1	George & Shirley McLaughlin #1	Michael & Mary Melnick #1
OPERATOR	C & C Troyer Brothers #14	Envirogas, Inc.	Harborcreek School District	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Gull Lake Energy Resources	N.E.A. Cross Company	N.E.A. Cross Company
TOWNSHIP	Wayne	Greenfield	Harborcreek	Elk Creek	Elk Creek	Elk Creek	Elk Creek	Springfield	LeBoeuf	LeBoeuf
QUADRANGLE & MAP NUMBER	Corry A 87 **Corry A	North East E 314 **North East G	North East D 334 **Harborcreek H	Girard F 552 **Conneautville B	Girard F 553 **Conneautville B	Girard F 554 **Conneautville B	Girard F 555 **Conneautville B	Fairview H 8 **Fairview SW I	Union City D 115 **Waterford G	Union City D 112 **Waterford H
LATITUDE	14,000 ft. S 42°00'00"	8,700 ft. S 42°10'00"	2,100 ft. S 42°10'00"	4,650 ft. S 41°52'30"	8,300 ft. S 41°52'30"	5,950 ft. S 41°52'30"	4,100 ft. S 41°52'30"	12,800 ft. S 42°02'30"	12,150 ft. S 41°55'00"	10,350 ft. S 41°55'00"
LONGITUDE	8,800 ft. W 79°42'30"	7,750 ft. W 79°50'00"	9,600 ft. W 79°55'00"	2,850 ft. W 80°17'30"	6,200 ft. W 80°17'30"	4,050 ft. W 80°17'30"	4,150 ft. W 80°17'30"	3,150 ft. W 80°22'30"	6,800 ft. W 79°57'30"	5,250 ft. W 79°55'00"
DATE COMPLETED	10-6-80	12-1-79	12-1-79	2-16-80	1-30-80	2-22-80	3-10-80	1-20-80	3-30-80	4-6-80
ELEVATION	1685 GR	1450 GR	700 GR	1130 GR	1110 GR	1100 GR	1140 GR	707 GR	1140 GR	1270 GR
TULLY	2790-	2052-	1320-					*1252-	*2400-	*2415-
ONONDAGA LIMESTONE	3038-	2279- Gas @2444-2449	2532-	*2302-	2288-	2284-	2318-	1440-	2630-	2640-
ONONDAGA CHERT										
ORISKANY			Absent	2552-	2532-	2532-	2581-	1702-	Absent	Absent
HELDERBERG								1710-		
KEYSER-BASS ISLAND								1754-	2880-	2888-
SALINA			2212-					1833-	2942-	2964-
GUELPH-LOCKPORT				3178-	3150-			2248-	3468-	
BLACK WATER										
CLINTON				3432-	*3418-	*3409-	*3452-	2562-	3735-	3800-
IRONDEQUOIT	4198-		2568-	3501-	3488-	3478-	3509-	2628-	3790-	3856-
MEDINA WHIRLPOOL	4216- Gas @4286-4335 4386-		2583- Gas @2619-2754 2740-	3537- Gas @3564-3641 3700-	3523- Gas @3575-3686 3686-	3513- Gas @3542-3678 3678-	3542- Gas @3569-3626 3694-	2651- Gas @2709-2717 2810-	3836- Gas @3852-3915 3990-	3896- Gas@3915-3993 4050-
QUEENSTON	4406-		2758-	3709-	3700-	3695-	3720-	2827-	4000-	4062-
TOTAL DEPTH	4446	2449	2816	3721	3758	3699	3740	2923	4130	4140
DEEPEST FORMATION REACHED	Queenston	Onondaga	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	1,900 Mcf AF 1,240 psi/7 days development Corry field	8.600 Mcf Natural 8.600 Mcf AF 754 psi/10 days extension Oelhill Corners North East field	750 Mcf AF 780 psi/48 hrs. development Harborcreek pool North East field	151 Mcf AF 860 psi/72 hrs. development Lundys Lane pool Conneaut field	1,243 Mcf AF 1.090 psi/72 hrs. development Lundys Lane pool Conneaut field	331 Mcf AF 840 psi/72 hrs. development Lundys Lane pool Conneaut field	1,040 Mcf AF 880 psi/72 hrs. development Lundys Lane pool Conneaut field	Open flow not given 1,200 psi/? New pool discovery Sequoyah pool Conneaut field	6,000 Mcf AF 1,220 psi/30 days development Mill Village field	1,000 Mcf AF 900 psi/3 days development Waterford pool LeBoeuf field

COUNTY Permit Number		Erie 20988	Erie 20989	Erie 20990	Erie 20991	Erie 20992	Erie 20993	Erie 21013	Erie 21020	Erie 21022	Erie 21034
NAME OF WELL		Raymond & Bertha Boyd #1	Edward & Elizabeth Kohmanski #1	Richard & Patricia Kingen #1	Waterford Com. Fair Assoc. #1	Robert Langdon #1	James H. Donnell #1	George & Harriet Mitchell #1	Harrison #1	John Sill #1	Michael Melnick #1
OPERATOR		N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	C & C Troyer Brothers #23	N.E.A. Cross Company	Torcal Resources, Inc.	Goe Pro, Inc. D/B/A Torcal Res.	N.E.A. Cross Company
TOWNSHIP		LeBoeuf	LeBoeuf	LeBoeuf	Waterford	LeBoeuf	Waterford	LeBoeuf	Union	Union	LeBoeuf
QUADRANGLE & MAP NUMBER		Union City D 116 **Waterford G	Union City D 117 **Waterford G	Union City D 118 **Waterford G	Union City A 119 **Waterford D	Union City D 120 **Waterford H	Union City A 121 **Waterford D	Union City D 122 **Waterford G	Union City F 146 **Union City H	Union City H 167 **Union City	Union City D 127 **Waterford G
LATITUDE		1[illegible],[illegible]00 ft. S 41°55'00"	10,200 ft. S 41°55'00"	5,450 ft. S 41°55'00"	13,000 ft. S 41°57'30"	12,900 ft. S 41°55'00"	3,900 ft. S 41°57'30	12,200 ft. S 41°55'00"	14,400 ft. S 41°55'00"	13,250 ft. S 41°55'00"	6,050 ft. S 41°55'00"
LONGITUDE		4,050 ft. W 79°57'30"	4,100 ft. W 79°57'30"	450 ft. W 79°57'30"	8,950 ft. W 79°57'30"	1,300 ft. W 79°55'00"	5,050 ft. W 79°57'30"	8,550 ft. W 79°57'30"	6,450 ft. W 79°47'30"	4,775 ft. W 79°47'30"	1,700 ft. W 79°57'30"
DATE COMPLETED		3-23-80	4-28-80	5-6-80	4-15-80	5-19-80	3-9-80	5-12-80	10-27-80	6-23-80	6-15-80
ELEVATION		1190 GR	1200 GR	1170 GR	1260 GR	1370 GR	1210 GR	1160 GR	1400 GR	1340 GR	1180 GR
TULLY		*2370-	*2392-	*2344-	2285-	2572-		2354-			2338-
ONONDAGA	LIMESTONE	2602-	2620-	298[illegible]-	2500-	2800-		2590-	2981-		2556-
	CHERT										
ORISKANY		Absent	Absent	Absent					3180-		
HELDERBERG											
KEYSER-BASS ISLAND		2850-	2883-	2804-	*2758-	*3034-		*2830-			*2798-
SALINA		2916-	2946-	2879-	2859-	3107-		2892-			2874-
GUELPH-LOCKPORT		3363-		3334-		3616-			3816-		
BLACK WATER											
CLINTON		3704-		3667-		3936-	*3464-	3688-			
IRONDEQUOIT		3758-	3782-	3733-	3702-	4006-	3514-	3742- Gas	4144-	4300-	3728-
MEDINA		3806- Gas @3830-3896	3830- Gas @3808-3900	3782- Gas @3796-3871	3738- Gas @379[illegible]-3849	4048- Gas @4069-4145	3556- Gas @3594-3650	3790- Gas @3790-3908	4206- Gas @4216-4282	4236- Gas @4288-4346	3772- Gas @3792-3866
WHIRLPOOL		3958-	3982-	3930-	3900-	4206-	3719-			4387-	3926-
QUEENSTON		3970-	3992-	3941-	3910-	4215-	3726-		4356-		3937-
TOTAL DEPTH		4052	4072	403[illegible]	4069	4300	3740	3945	4401	4512	4011
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Cabot Head	Queenston	Queenston	Queenston
RESULT		1,200 Mcf AF 1,200 psi/3 days extension Mill Village field	8,000 Mcf AF 1,220 psi/3 days extension Mill Village field	13,900 Mcf AF 1,220 psi/3 days extension Waterford pool LeBoeuf field	2,000 Mcf AF 1,190 psi/3 days development Waterford pool LeBoeuf field	3,000 Mcf AF 1,200 psi/[illegible] days extension New Ireland field	3,800 Mcf AF 1.140 psi/3 days extension Waterford pool LeBoeuf field	4,000 Mcf Natural 1,200 psi/3 days development Mill Village field	90 Mcf AF 770 psi/48 hrs. development Pattison pool New Ireland field	1,500 Mcf AF 1,050 psi/24 hrs. development Pattison pool New Ireland field	6,900 Mcf AF 1,220 psi/7 days development Waterford pool LeBoeuf field

Figure 32. *(Continued)*

COUNTY Permit Number	Erie 21035	Erie 21039	Erie 21044	Erie 21049	Erie 21053	Erie 21054	Erie 21057	Erie 21061	Erie 21062	Erie 21063
NAME OF WELL	Philip & Ruth Pennsy #1	Ernest A. Marsh #1	Richard Stutzman #1	Kenneth & Shirley Wise #4	Lewis Rhea #1	Maurice Roan #1	Paul & Sylvia Skelton #1	L. Billings & R. Kovel #1	Billings & Billings #1	John McCreary et ux #1
OPERATOR	N.E.A. Cross Company	Vineyard Oil & Gas Company	C & C Troyer Brothers #24	N.E.A. Cross Company	C & C Troyer Brothers #25	Envirogas, Inc.	N.E.A. Cross Company	Meridian Exploration #528	Meridian Exploration #529	Meridian Exploration #530
TOWNSHIP	LeBoeuf	Waterford	Wayne	LeBoeuf	Wayne	North East	Waterford	Washington	Washington	Washington
QUADRANGLE & MAP NUMBER	Union City E 113 **Waterford I	Cambridge Spgs 88 **Cambridge Spgs	Corry A 88 **Corry A	Union City O 114 **Waterford H	Union City C 123 **Union City C	North East C 315 **North East E	Union City D 108 **Waterford G	Cambridge Spgs 116 **Cambridge Spgs	Cambridge Spgs 61 **Cambridge Spgs	Cambridge Spgs 62 **Cambridge Spgs
LATITUDE	9,800 ft. S 41°55'00"	7,550 ft. S 41°57'30"	12,150 ft. S 42°00'00"	5,900 ft. S 41°55'00"	12,150 ft. S 42°00'00"	14,750 ft. S 42°12'30"	250 ft. S 41°55'00"	4,350 ft. S 41°52'30"	6,400 ft. S 41°52'30"	8,900 ft. S 41°52'30"
LONGITUDE	6,300 ft. W 79°52'30"	6,000 ft. W 80°00'00"	9,800 ft. W 79°42'30"	6,700 ft. W 79°55'00"	100 ft. W 79°45'00"	2,200 ft. W 79°47'30"	7,100 ft. W 79°57'30"	11,150 ft. W 80°00'00"	10,000 ft. W 80°00'00"	7,600 ft. W 80°02'30"
DATE COMPLETED	6-22-80	6-27-80	7-4-80	6-29-80	7-14-80	8-4-80	7-5-80	10-19-80	10-26-80	9-30-80
ELEVATION	1280 GR	1340 GR	1735 GR	1180 GR	1560 GR	1340 GR	1165 GR	1280 GR	1351 KB	1160 GR
TULLY	2425-	*2374-	2830-	2300-	2646-	1898-	2250-	*2472-	**2543-	*2360-
ONONDAGA LIMESTONE	2702-	2598-	3072-	2524-	2890-	2140-	2472-	2688-	2759-	2580-
ONONDAGA CHERT										
ORISKANY		2792-						Absent	3004-	2820-
HELDERBERG		2800-								
KEYSER-BASS ISLAND	*2940-	2830-					*2732-	2942-	3024-	2830-
SALINA	3012-	2894-					2814-	3005-	3068-	2890-
GUELPH-LOCKPORT BLACK WATER						2856-		3514-	3580-	3408-
CLINTON							3609-	3822-	3917-	3740-
IRONDEQUOIT	3901-	3720-	4224-	*3722-	4037-	3176-	3662-	3902-	3971-	3794-
MEDINA WHIRLPOOL	3951- Gas @3979-4050 4099-	3748- Gas @3791-3863 3922-	4244- Gas @4307-4360 4416-	3742- Gas @3824-3862 3924-	4056- Gas @4102-4174 4230-	3206- Gas @3209-3312 3349-	3708- Gas @3730-3812 3859-	3951- Gas @3972-4112 4103-	3994- Gas @4043-4184 4172-	3818- Gas @3853-4002 3998-
QUEENSTON	4112-	3931-	4433-	3935-	4246-	3364-	3868-	4114-	4188-	4008-
TOTAL DEPTH	4195	3932	4450	3998	4288	3364	3950	4214	4288	4115
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	2,300 Mcf AF 1,220 psi/3 days development New Ireland field	2,400 Mcf AF 1,132 psi/5 days Deeper pool discovery Swails pool Drumlin field	500 Mcf AF 1,050 psi/2 days development Corry field	3,400 Mcf AF 1,220 psi/2 days development Waterford pool LeBoeuf field	1,000 Mcf AF 1,160 psi/7 days development Corry field	473 Mcf AF 983 psi/10 days development Bull Reservoir pool North East field	900 Mcf AF 1,210 psi/2 days development Waterford pool LeBoeuf field	108 Mcf AF 1,050 psi/7 days development Edinboro North field	621 Mcf AF 1,180 psi/7 days extension Edinboro North field	393 Mcf AF 1,060 psi/7 days extension Edinboro North field

COUNTY Permit Number	Erie 21064	Erie 21065	Erie 21066	Erie 21067	Erie 21068	Erie 21069	Erie 21070	Erie 21071	Erie 21072	Erie 21073
NAME OF WELL	Roscoe Robertson #1	J. Davis, et ux #1	John L. Showman #1	Donald R. Goss, et ux #1	Daniel O'Connor #1	E. Stafford #1	Esther Stafford #1	Robert Herman #1	Robert Berry #1	Louis Beck #1
OPERATOR	Meridian Exploration #531	Meridian Exploration #532	Meridian Exploration #533	Meridian Exploration #534	Meridian Exploration #535	Meridian Exploration #536	Meridian Exploration #537	Cardinal Oil Company #45	Cardinal Oil Company #47	Cardinal Oil Company #48
TOWNSHIP	Washington	Washington	Washington	Washington	Washington	Washington	Washington	Franklin	Franklin	Franklin
QUADRANGLE & MAP NUMBER	Cambridge Spgs 63 **Cambridge Spgs.	Cambridge Spgs 78 **Cambridge S NE	Cambridge Spgs 79 **Cambridge S NE	Cambridge Spgs 94 **Cambridge S NE	Cambridge Spgs 117 **Cambridge S NE	Cambridge Spgs 102 **Cambridge S NE	Cambridge Spgs 64 **Cambridge S NE	Cambridge Spgs 68 **Edinboro North	Cambridge Spgs 69 **Edinboro North	Cambridge Spgs 70 **Edinboro North
LATITUDE	4,600 ft. S 41°52'30"	11,200 ft. S 41°55'00"	5,350 ft. S 41°55'00"	4,900 ft. S 41°55'00"	3,650 ft. S 41°55'00"	9,250 ft. S 41°55'00"	13,900 ft. S 41°55'00"	13,650 ft. S 41°57'30"	14,350 ft. S 41°57'30"	13,700 ft. S 41°57'30"
LONGITUDE	5,950 ft. W 80°02'30"	7,500 ft. W 80°02'30"	6,700 ft. W 80°02'30"	9,550 ft. W 80°02'30"	3,300 ft. W 80°02'30"	8,900 ft. W 80°02'30"	7,150 ft. W 80°02'30"	10,850 ft. W 80°10'00"	900 ft. W 80°12'30"	5,360 ft. W 80°10'00"
DATE COMPLETED	10-11-80	11-9-80	12-13-80	11-23-80	12-20-80	11-17-80	11-2-80	8-14-80	8-18-80	8-27-80
ELEVATION	1175 GR	1480 GR	1300 GR	1380 GR	1400 GR	1460 GR	1435 KB	1312 GR	13[illegible] GR	1298 GR
TULLY	*2352-	*2589-	*2381-	*2450-	*2482-	*2558-	*2553-	2240-	2230-	2252-
ONONDAGA LIMESTONE	2571-	2806-	2598-	2613-	2696-	2774-	2770			
CHERT								2442-	2430-	2456-
ORISKANY	2828-	Absent	Absent	Absent Bois Blanc 2858-	Absent	Absent	Absent	Absent	*2715-	*2728-
HELDERBERG		3057-	2860-	2930-		3029-	2960-			
KEYSER-BASS ISLAND	2838-	3079-	2884-	2966-	2957-	3056-	3024-	2756-	2740-	2749-
SALINA	2903-	3125-	2924-	2999-	3026-	3097-	3092-	2800-	2784-	2799-
GUELPH-LOCKPORT BLACK WATER	3385-	3608-	3376-	3452-	3477-	3570-	3622-	3209-	3200-	3206-
CLINTON	3722-	3916-	3706-	3761-	3813-	3901-	3915-	3546-	3540-	3568-
IRONDEQUOIT	3778-	3999-	3764-	3840-	3866-	3956-	3968-	3606-	3595-	3617-
MEDINA WHIRLPOOL	3802- Gas @3849-3986 3980-	4022- Gas @4064-4139 4197-	3786- Gas @3852-3967 3960-	3882- Gas @3902-4035 4035-	3911- Gas @3940-4070 4065-	4003- Gas @4012-4065 4155-	3990- Gas @4040-4172 4168-	3647- Gas @3650-3805 3799-	3636- Gas @3631-3799 3794-	3656- Gas @3668-3814 3816-
QUEENSTON	3990-	4205-	3970-	4044-	4073-	4163-	4174-	3806-	3804-	3826-
TOTAL DEPTH	4114	4305	4075	4145	4175	4263	4298	3875	3851	3880
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	440 Mcf AF 1,120 psi/10 days extension Edinboro North field	82 Mcf Nat. 392 Mcf AF 1,200 psi/7 days extension Edinboro North field	112 Mcf Nat. 362 Mcf AF 1,140 psi/7 days extension Edinboro North field	552 Mcf AF 1,030 psi/7 days development Edinboro North field	205 Mcf AF 1,080 psi/7 days development Edinboro North field	427 Mcf AF 1,170 psi/7 days development Edinboro North field	393 Mcf AF 1,180 psi/7 days extension Edinboro North field	700 Mcf AF 1,100 psi/3 days extension Franklin Center field	690 Mcf AF 1,020 psi/3 days development Franklin Center field	710 Mcf AF 1,060 psi/3 days development Franklin Center field

Figure 32. (Continued)

COUNTY Permit Number		Erie 21074	Erie 21075	Erie 21076	Erie 21079	Erie 21080	Erie 21081	Erie 21086	Erie 21093	Erie 21094	Erie 21095
NAME OF WELL		Helen I. Lechefsky #1	Hammond #1, Tract 2	Vere O. Woods #1	B. L. Tarbell #1	Stanley J. Hudy #1	Stella Romanowski #1	Stella Romanowski #2	John Pavkov #2	Helen & Theodore Rhomba #1	Walter Kosienski #2
OPERATOR		Cardinal Oil Company #50	C & C Troyer Brothers #26	N.E.A. Cross Company	N.E.A.Cross Company	Cardinal Oil Company #46	Cardinal Oil Company #54	Cardinal Oil Company #54	Mutual Oil & Gas Co. #M-12-P	Mutual Oil & Gas Co. #M-13-D	Mutual Oil & Gas Co. #M-9-P
TOWNSHIP		Franklin	Wayne	Washington	Washington	Washington	Franklin	Franklin	McKean	McKean	McKean
QUADRANGLE & MAP NUMBER		Cambridge Spgs 71 **Edinboro North	Corry A 89 **Corry O	Cambridge Spgs 80 **Edinboro North	Cambridge Spgs 81 **Edinboro South	Cambridge Spgs 72 **Edinboro North	Cambridge Spgs 73 **Edinboro North	Cambridge Spgs 74 **Edinboro North	Cambridge Spgs 82 **Edinboro North	Cambridge Spgs 83 **Cambridge S NE	Cambridge Spgs 90 **Cambridge S NE
LATITUDE		100 ft. S 41°55'00"	7,200 ft. S 41°57'30"	4,000 ft. S 41°52'30"	6,350 ft. S 41°52'30"	11,900 ft. S 41°57'30"	1,240 ft. S 41°55'00"	2,800 ft. S 41°55'00"	2,550 ft. S 41°57'30"	1,000 ft. S 41°57'30"	11,900 ft. S 42°00'00"
LONGITUDE		4,650 ft. W 80°10'00"	11,100 ft. W 79°42'30"	1,450 ft. W 80°07'30"	3.550 ft. W 80°07'30"	10,150 ft. W 80°10'00"	5,480 ft. W 80°10'00"	5,380 ft. W 80°10'00"	450 ft. W 80°07'30"	6,600 ft. W 80°05'00"	9,550 ft. W 80°02'30"
DATE COMPLETED		9-6-80	7-30-80	7-28-80	8-4-80	8-20-80	9-5-80	9-12-80	8-26-80	9-19-80	9-26-80
ELEVATION		1276 GR	1460 GR	1200 GR	1315 GR	1287 GR	1305 GR	1290 GR	1370 GR	1420 GR	1475 GR
TULLY		*2218-	2666-	*2285-	*2400-	*2206-	*2248-	*2236-	*2299-	*2334-	*2362-
ONONDAGA	LIMESTONE	2422-	2915-	2500-	2622-	2410-	2454-	2438-	2508-	2546-	2572-
	CHERT										
ORISKANY		Absent				Absent	Absent	Absent	Absent	Bois Blanc 2740-2796	2850-?
HELDERBERG											
KEYSER-BASS ISLAND		2709-		2760-	2870-	2691-	2720-	2717-	2784-	2796-	2868-
SALINA		2766-		2832-	2942-	2760-	2800-	2790-	2852-	2896-	3005-
GUELPH-LOCKPORT		3268-				3230-	3300-	3290-	3314-	3357-	3403-
BLACK WATER											
CLINTON		3530-				3502-	3560-	3553-	3609-	3636-	3690-
IRONDEQUOIT		3602-	*4050-	3714-	3831-	3560-	3631-	3626-	3661-	3698-	3745-
MEDINA WHIRLPOOL		3640- Gas @3673-3805 3799-	4076- Gas @4124-4188 4244-	3760- Gas @3778-3839 3912-	3838- Gas @3899-3981 4032-	3594- Gas @3594-3764 3758-	3676- Gas @3668-3838 3828-	3662- Gas @3674-3828 3821-	3700- Gas @3712-3751 3853-	3719- Gas @3747-3795 3889-	3784- Gas @3805-3851 3939-
QUEENSTON		3810-	4258-	3924-	4041-	3776-	3840-	3832-	3862-	3897-	3946-
TOTAL DEPTH		3871	4341	4000	4077	3828	3895	3893	3961	4000	4044
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		810 Mcf AF 1,050 psi/3 days development Franklin Center field	500 Mcf AF 810 psi/7 days development Corry field	304 Mcf AF 1,180 psi/3 days extension Edinboro field	2,200 Mcf AF 1,180 psi/7 days extension Edinboro field	780 Mcf AF 1,100 psi/3 days development Franklin Center field	820 Mcf AF 1,050 psi/3 days extension Franklin Center field	850 Mcf AF 1,125 psi/3 days development Franklin Center field	189 Mcf Nat. 635 Mcf AF 1,050 psi/24 hrs. development Reeds Corners field	51 Mcf Nat. 835 Mcf AF 1,050 psi/48 hrs. development Reeds Corners field	1,670 Mcf AF 1,050 psi/48 hrs. extension Reeds Corners field

COUNTY Permit Number	Erie 21101	Erie 21102	Erie 21112	Erie 21115	Erie 21117	Erie 21119	Erie 21119	Erie 21121	Erie 21124	Erie 21125
NAME OF WELL	Frank Zajac #1	Clinton H. Smith #1	Joseph & Josephine Glavic #1	Robert, Earl & Donald Orr #1	William M. Curt #1	Thomas Saunders #1	Cliff Post #2	H. Hamrick #1	William Higgins #1	Irving Olds Murphy #1
OPERATOR	C & C Troyer Brothers #28	C & C Troyer Brothers #30	Northwest Natural Gas Company	N.E.A. Cross Company	Mutual Oil & Gas Company #M-14-P	Envirogas, Inc.	Envirogas, Inc.	Envirogas, Inc.	N.E.A. Cross Company	C & C Troyer Brothers #31
TOWNSHIP	Union	Union	Elk Creek	Washington	McKean	Greenfield	North East	Greenfield	Washington	Washington
QUADRANGLE & MAP NUMBER	Union City C 124 **Union City F	Union City C 125 **Union City F	Girard E 540 **Conneautville A	Cambridge Spgs 84 **Edinboro North	Cambridge Spgs 59 **Cambridge S NE	North East F 308 **North East H	North East F 304 **North East H	North East H 343 **North East	Cambridge Spgs 85 **Cambridge S NE	Cambridge Spgs 65 **Cambridge S NE
LATITUDE	14,800 ft. S 41°57'30"	14,500 ft. S 41°57'30"	4,200 ft. S 41°52'30"	14,950 ft. S 41°55'00"	1,350 ft. S 41°57'30"	6,870 ft. S 42°10'00"	2,790 ft. S 42°10'00"	5,820 ft. S 42°10'00"	11,750 ft. S 41°55'00"	6,400 ft. S 41°55'00"
LONGITUDE	4,000 ft. W 79°45'00"	5,800 ft. W 79°45'00"	4,200 ft. W 80°20'00"	6,350 ft. W 80°07'30"	4,200 ft. W 80°05'00"	2,060 ft. W 79°47'30"	430 ft. W 79°47'30"	7,590 ft. W 79°47'30"	2,450 ft. W 80°05'00"	11,000 ft. W 80°02'30"
DATE COMPLETED	9-19-80	9-12-80	9-11-80	8-11-80	9-12-80	10-8-80	9-18-80	8-16-81	8-21-80	10-1-80
ELEVATION	1560 GR	1063 GR	1065 GR	1300 GR	1400 GR	1450 KB	1440 DF	1465 GR	1470 GR	1486 DF
TULLY	*2800-	*2830-	2022-	*2350-		2051-	2018-	2082-	*2576-	2546-
ONONDAGA LIMESTONE	3046-	3070-	2202-	2560-		2284-	2258-	2316-	2790-	2760-
ONONDAGA CHERT										
ORISKANY							Absent			
HELDERBERG										
KEYSER-BASS ISLAND			2466-	2822-				2573-	3042-	
SALINA			2526-	2934-	*2910-			2686-	3114-	
GUELPH-LOCKPORT BLACK WATER			3056-		3308-	3028-	2948-	3036-		
CLINTON			3328-		3646-		3242-	3310-		
IRONDEQUOIT	4202-	4230-	3402-	3770-	3698-	3345-	3302-	3348-	3996-	3941-
MEDINA WHIRLPOOL	4230- Gas @4272-4321 4400-	4260- Gas @4298-4376 4425-	3430- Gas @3475-3523 3603-	3809- Gas @3830-3882 3970-	3720- Gas @3763-3817 3890-	3372- Gas @3383-3531 3517-	3326- Gas @3358-3436 3476-	3391- Gas @3398-3537 3521-	4037- Gas @4066-4106 4192-	3970 Gas @4000-4052 4139-
QUEENSTON	4410-	4440-	3612-	3982-	3900-	3533-	3492-	3540-	4201-	4149-
TOTAL DEPTH	4475	4528	362	4058	3998	3607	3557	3632	4282	4212
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	212 Mcf AF 1,220 psi/3 days extension Tarbell pool Corry field	250 Mcf AF 1,160 psi/7 days New pool wildcat Tarbell pool Corry field	1,200 Mcf AF 1,025 psi/2 days development Lundy's Lane pool Conneaut field	200 Mcf AF 1,180 psi/7 days extension Edinboro field	2,150 Mcf AF 1,100 psi/? extension Reeds Corners field	500 Mcf AF 1,110 psi/7 days development Bull Reservoir pool North East field	212 Mcf AF 1,040 psi/10 days development Bull Reservoir pool North East field	1,070 Mcf AF 890 psi/10 days development Bull Reservoir pool North East field	1,200 Mcf AF 1,180 psi/7 days extension Edinboro N.E. field	200 Mcf Nat. 15,000 Mcf AF est 1,180 psi/3 days extension Edinboro North field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21126	Erie 21127	Erie 21128	Erie 21129	Erie 21130	Erie 21134	Erie 21134	Erie 21137	Erie 21138	Erie 21140
NAME OF WELL	Valentine Osterman #1	P & G Zarenko #1	R & J Smith #1	Frank & Lucille Kitcey #1	Mary & John Salchak #1	Edward & Jeanette Mikovich #1	Greenfield Township #1	Joan Elwinger #1	Geraldine & Bernard Burek #1	Louis L. Beck #2
OPERATOR	N.E.A. Cross Company	Goe Pro, Inc.	Zodiac Resources, Incorporated	Northwest Natural Gas Company	N.E.A. Cross Company	Northwest Natural Gas Company	Envirogas, Inc.	Northwest Natural Gas Company	N.E.A. Cross Company	Cardinal Oil Company #49
TOWNSHIP	LeBoeuf	Elk Creek	Elk Creek	Elk Creek	Washington	Elk Creek	Greenfield	Elk Creek	LeBoeuf	Franklin
QUADRANGLE & MAP NUMBER	Union City D 132 **Waterford G	Girard F 556 **Conneautville B	Girard F 557 **Conneautville B	Girard E 541 **Conneautville A	Cambridge Spgs 86 **Cambridge S NE	Girard F 542 **conneautville B	North East F 309 **North East H	Girard E 543 **Conneautville A	Union City E 133 **Waterford I	Cambridge Spgs 75 **Edinboro North E
LATITUDE	9,000 ft. S 41°55'00"	200 ft. S 41°52'30"	2,100 ft. S 41°52'30"	6,800 ft. S 41°52'30"	12,150 ft. S 41°55'00"	8,500 ft. S 41°52'30"	7,020 ft. S 42°10'00"	8,200 ft. S 41°52'30"	5,700 ft. S 41°55'00"	12,760 ft. S 41°57'30"
LONGITUDE	9,500 ft. W 79°57'30"	1,500 ft. W 80°17'30"	2,400 ft. W 80°17'30"	2,750 ft. W 80°20'00"	4,200 ft. W 80°02'30"	9,500 ft. W 80°17'30"	5,700 ft. W 79°47'30"	3,150 ft. W 80°20'00"	5,900 ft. W 79°52'30"	4,480 ft. W 80°10'00"
DATE COMPLETED	9-5-80	10-15-80	9-9-80	9-16-80	8-28-81	9-18-80	9-24-80	9-17-80	9-11-80	9-16-80
ELEVATION	1175 GR	1190 GR	1150 GR	1100 GR	1190 GR	1150 GR	1450 KB	1105 GR	1240 GR	1302 GR
TULLY	*2323-			2072-	*2364-	2124-	2060-	2074-	2404-	2233-
ONONDAGA LIMESTONE	2542-	2338-	2305-	2251-	2580-	2312-	2298-	2259-	2634-	2438-
ONONDAGA CHERT										
ORISKANY										
HELDERBERG										
KEYSER-BASS ISLAND	2809-			2518-	2828-	2560-		2510-	2870-	
SALINA	2871-			2588-	2896-	2641-		2596-	2940-	3098-
GUELPH-LOCKPORT BLACK WATER	3334-			3104-		3377-	3014-	3103-	3424-	
CLINTON	3660-			3350-		3454-		3346-	*3751-	*3554-
IRONDEQUOIT	3716-	3530-	3495-	3449-	3778-	3518-	3331-	3464-	3819-	3611-
MEDINA WHIRLPOOL	3762- Gas @3796-3852 3914-	3560- Gas @3610-3688 3710-	3515- Gas @3586-3682 3680-	3481- Gas @3514-3570 3648-	3824- Gas @3839-3895 3975-	3549- Gas @3605-3639 3730-	3363- Gas @3370-3517 3506-	3494- Gas @3549-3582 3665-	3866- Gas @3888-3965 4012-	3634- Gas @3662-3817 3810-
QUEENSTON	3925-	3736-	3690-	3652-	3984-	3734-	3520-	3668-	4024-	3810-
TOTAL DEPTH	3996	3776	3700	3652	4061	3764	3602	3668	4094	3852
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	2,600 Mcf AF 1,200 psi/7 days extension Mill Village field	3,300 Mcf AF 780 psi/48 hrs. extension Lundy's Lane pool Conneaut field	1,113 Mcf AF 790 psi/48 hrs. development Lundy's Lane pool Conneaut field	1,500 Mcf AF 1,020 psi/2 days development Lundy's Lane pool Conneaut field	3,500 Mcf AF 1,190 pis/7 days development Edinboro North field	1,100 Mcf AF 1,075 psi/2 days development Lundy's Lane pool Conneaut field	1,700 Mcf AF 1,040 psi/10 days extension Bull Reservoir pool North East field	1,000 Mcf AF 1,020 psi/2 days development Lundy's Lane pool Conneaut field	105 Mcf AF 1,100 psi/7 days extension Waterford pool LeBoeuf field	650 Mcf AF 950 psi/3 days development Franklin Center field

COUNTY Permit Number		Erie 21142	Erie 21144	Erie 21145	Erie 21147	Erie 21158	Erie 21153	Erie 21154	Erie 21155	Erie 21156	Erie 21159
NAME OF WELL		X. Meehl #4	James Szybowski #1	Belmas Chesley #2	Clyde Miller #1	Robert Boyd #1	Richard F. Magee #1	George & Harriet Mitchell #2	Orbanek & Rewers #1	Carl Krautter #1	W. & T. Nagle #1
OPERATOR		Envirogas, Inc.	Envirogas, Inc.	Envirogas, Inc.	Envirogas, Inc.	Vineyard Oil & Gas Company	Vineyard Oil & Gas Company	N.E.A. Cross Company	Mutual Oil & Gas Company #M-15-P	Cardinal Oil Company #57	Goe Pro, Inc.
TOWNSHIP		North East	Greenfield	Greenfield	North East	North East	LeBoeuf	LeBoeuf	McKean	Franklin	Elk Creek
QUADRANGLE & MAP NUMBER		North East C 324 **North East F	North East F 316 **North East H	North East F 310 **North East H	North East B 311 **North East D	North East B 317 **Harborcreek F	Union City D 109 **Millers Station	Union City D 134 **Waterford G	Cambridge Spgs 93 **Cambridge S NE	Cambridge Spgs 76 **Edinboro North	Girard F 558 **Conneautville B
LATITUDE		8,000 ft. S 42°12'30"	8,750 ft. S 42°10'00"	8,500 ft. S 42°10'00"	14,680 ft. S 42°12'30"	2,200 ft. S 42°12'30"	50 ft. S 41°52'30"	11,600 ft. S 41°55'00"	8,100 ft. S 42°00'00"	10,140 ft. S 41°57'30"	5,200 ft. S 41°52'30"
LONGITUDE		5,250 ft. W 79°50'00"	4,300 ft. W 79°47'30"	6,900 ft. W 79°47'30"	10,060 ft. W 79°50'00"	250 ft. W 79°52'30"	100 ft. W 79°55'00"	4,350 ft. W 79°57'30"	3,850 ft. W 80°05'00"	10,100 ft. W 80°10'00"	7,800 ft. W 80°17'30"
DATE COMPLETED		1-12-81	10-26-80	10-17-80	10-6-80	11-25-80	10-21-80	9-19-80	11-16-80	9-25-80	9-27-80
ELEVATION		945 GR	1395 GR	1480 KB	1200 DF	775 GR	1420 GR	1195 GR	1410 GR	1265 GR	1050 GR
TULLY		1444-	2048-	2126-	*2164-	1278-	2604-	*2388-	*2276-	*2164-	
ONONDAGA	LIMESTONE	1670-	2272-	2342-	1978-	1436-	2830-	2610-	2492-	2368-	2214-
	CHERT										
ORISKANY							Absent		Absent	Absent	2474-
HELDERBERG											
KEYSER-BASS ISLAND							3070-	2804-	2697-	2577-	
SALINA							3162-	2930-	2897-	2716-	
GUELPH-LOCKPORT		2326-	3006-	3074-	2694-	2235-	3715-	3400-	3310-	3203-	3064-
	BLACK WATER										
CLINTON							3923-	3728-	3593-	3474-	
	IRONDEQUOIT	2679-	3322-	3386-	3000-	2456-	4042-	3778-	3641-	3532-	3406-
MEDINA		2715- Gas @2730-2870	3354- Gas @3373-3510	3418- Gas @3461-3574	3030- Gas @3064-3191	2470- Gas @2525-2636	4064 Gas @4121-4205	3824- Gas @3845-3935	3672- Gas @3700-3850	3568- Gas @3579-3736	3440- Gas @3499-3516
	WHIRLPOOL	2851-	3494-	3561-	3176-	2630-	4242-	3976-	3842-	3728-	3500-
QUEENSTON		2874-	3512-	3579-	3196-	2646-	4256-	3986-	3852-	3740-	
TOTAL DEPTH		2948	3597	3679	3266	2703	4297	4051	3923	3790	3632
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		2,000 Mcf AF 850 psi/7 days development Burgess pool North East field	212 Mcf AF 1,050 psi/10 days development Bull Reservoir pool North East field	1,500 Mcf AF 1,000 psi/10 days development Bull Reservoir pool North East field	500 Mcf AF 800 psi/7 days development Burgess pool North East field	280 Mcf AF 830 psi/4 days development Burgess pool North East field	5,000 Mcf Nat. RP not given extension New Ireland field	3,000 Mcf AF 1,160 psi/24 hrs. development Mill Village field	1,175 Mcf AF 1,050 psi/48 hrs. extension Reeds Corners field	725 Mcf AF 1,075 psi/3 days development Franklin Center field	213 Mcf AF 900 psi/48 hrs. development Lundy's Lane pool Conneaut field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21160	Erie 21161	Erie 21162	Erie 21163	Erie 21164	Erie 21166	Erie 21167	Erie 21169	Erie 21172	Erie 21173
NAME OF WELL	Albion Area Sportsman Club #1	Arden & Dorothy Teed #1	Hans K. Hallgren #1	Felix Wozniak #1	Houghton-Babo #1	Russell Arrigo #1	Emmitt Maas #1	Philip Walker #1	Rodney Brandon #1	Charles Austin #1
OPERATOR	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Mutual Oil & Gas Company #M-19-P	Mutual Oil & Gas Company #M-17-P	Envirogas, Inc.	Envirogas, Inc.	C & C Troyer Brothers #32	Cardinal Oil Company #59	C & C Troyer Brothers #33
TOWNSHIP	Conneaut	Conneaut	Conneaut	McKean	McKean	Greenfield	Greenfield	Washington	Franklin	Washington
QUADRANGLE & MAP NUMBER	Girard E 566 **Beaver Center	Girard E 559 **Beaver Center	Girard E 560 **Beaver Center	Cambridge Spgs 91 **Cambridge S NE	Cambridge Spgs 92 **Cambridge S NE	North East F 312 **North East H	North East H 337 **North East	Cambridge Spgs 66 **Cambridge S NE	Cambridge Spgs 77 **Cambridge S NE	Cambridge Spgs 67 **Cambridge Spgs
LATITUDE	6,300 ft. S 41°52'30"	4,350 ft. S 41°52'30"	1,450 ft. S 41°52'30"	12,850 ft. S 42°00'00"	14,100 ft. S 42°00'00"	8,910 ft. S 42°10'00"	12,300 ft. S 42°10'00"	6,800 ft. S 41°55'00"	10,960 ft. S 41°57'30"	11,000 ft. S 41°55'00"
LONGITUDE	9,050 ft. W 80°22'30"	9,100 ft. W 80°22'30"	10,000 ft. W 80°22'30"	4,300 ft. W 80°05'00"	3,100 ft. W 80°05'00"	550 ft. W 79°47'30"	2,050 ft. W 79°47'30"	11,300 ft. W 80°05'00"	8,880 ft. W 80°10'00"	8,100 ft. W 80°05'00"
DATE COMPLETED	11-5-80	10-30-80	10-27-80	11-24-80	10-30-80	10-1-80	7-28-81	10-4-80	9-30-80	10-4-80
ELEVATION	850 GR	850 GR	850 GR	1455 GR	1470 GR	1450 DF	1405 GR	1270 GR	1311 GR	1280 GR
TULLY				*2364-	*2381-	2078-	2066-	*2300-	*2218-	*2346-
ONONDAGA LIMESTONE	1950-	1924-	1906-	2574-	2594-	2320-	2306-	2510-	2422-	2560-
ONONDAGA CHERT										
ORISKANY				Absent	2882-				Absent	
HELDERBERG										
KEYSER-BASS ISLAND				2776-	2892-		2552-		2704-	
SALINA				2954-	2972-		2656-		2776-	
GUELPH-LOCKPORT				3369-	3391-	3046-	3022-		3260-	
BLACK WATER										
CLINTON				3656-	3682-		3300-		3536-	
IRONDEQUOIT	3154-	3146-	3118-	3709-	3731-	3358-	3342-	3700-	3590-	3758-
MEDINA WHIRLPOOL	3181- Gas @3217-3261 3345-	3165- Gas @3186-3240 3327-	3146- Gas @3191-3232 3311-	3731- Gas @3769-3923 3901-	3752- Gas @3787-3922 3924-	3390- Gas @3394-3544 3530-	3368- Gas @3401-3532 3516-	3733- Gas @3764-3812 3896-	3630- Gas @3650-3795 3790-	3790- Gas @3818-3872 3906-
QUEENSTON	3364-	3344-	3326-	3910-	3932-	3547-	3536-	3906-	3798-	3914-
TOTAL DEPTH	3384	3368	3361	3980	3984	3630	3608	3916	3870	4016
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	110 Mcf AF 925 psi/48 hrs. development Bushnell-Lexington pool Conneaut field	2,500 Mcf AF 650 psi/48 hrs. extension Bushnell-Lexington pool Conneaut field	7,000 Mcf AF 1,000 psi/48 hrs. extension Bushnell-Lexington pool Conneaut field	183 Mcf Nat. 1,670 Mcf AF 1,075 psi/48 hrs development Reeds Corners field	133 Mcf Nat. 960 Mcf AF 1,050 psi/48 hrs. development Reeds Corners field	2,100 Mcf AF 1,050 psi/10 days development Bull Reservoir pool North East field	345 Mcf AF RP not given extension Bull Reservoir pool North East field	200 Mcf AF 1,180 psi/7 days extension Edinboro field	750 Mcf AF 1,075 psi/3 days development Franklin Center field	1,100 Mcf AF 1,150 psi/24 hrs. New field wildcat Edinboro field

COUNTY Permit Number	Erie 21175	Erie 2[illegible]176	Erie 21177	Erie 21178	Erie 21179	Erie 21180	Erie 2118[illegible]	Erie 21184	Erie 21185	Erie 21186
NAME OF WELL	Ferdinand Bliley #1	Doris O. Wester #1	William Rodger Scott #1	Reva Revak #1	David & Felicidad Guianen #3	Lynford & Gladys Proper #1	James Cook #1	James Cook #2	Donald Troyer #1	Scot's Glen Dev. Co. #1
OPERATOR	Union Drilling, Inc. #546-PC	Union Drilling, Inc. #646-PC	Union Drilling, Inc. *615-PC	Cardinal Oil Company #61	Northwest Natural Gas Company	Union Drilling, Inc. #726-PC	Envirogas, Inc.	Envirogas, Inc.	C & C Troyer Brothers #34	U. S. Energy Development Corp.
TOWNSHIP	Waterford	Waterford	Waterford	Elk Creek	Elk Creek	LeBoeuf	North East	North East	Union	Washington
QUADRANGLE & MAP NUMBER	Union City A 135 **Waterford E	Union City A 136 **Waterford E	Union City A 128 **Waterford E	Girard F 611 **Conneautville	Girard F 544 **Conneautville B	Union City E 129 **Waterford I	North East B 319 **North East D	North East B 313 **North East D	Union City C 126 **Union City E	Cambridge Spgs 98 **Edinboro North I
LATITUDE	9,500 ft. S 41°57'30"	8,150 ft. S 41°57'30"	5,250 ft. S 41°57'30"	8,680 ft. S 41°52'30"	8,200 ft. S 41°52'30"	13,700 ft. S 41°55'00"	6,100 ft. S 42°12'30"	4,300 ft. S 42°12'30"	14,000 ft. S 41°57'30"	1,650 ft. S 41°55'00"
LONGITUDE	8,050 ft. W 79°55'00"	1,650 ft. W 79°55'00"	8,200 ft. W 79°55'00"	3,460 ft. W 80°15'00"	11,250 ft. W 80°17'30"	4,000 ft. W 79°52'30"	8,700 ft. W 79°50'00"	8,600 ft. W 79°50'00"	350 ft. W 79°47'30"	1,000 ft. W 80°07'30"
DATE COMPLETED	12-3-80	10-16-80	10-16-80	10-14-80	10-8-80	10-22-80	11-11-80	10-11-80	10-13-80	11-23-80
ELEVATION	1270 GR	1295 GR	1370 GR	1205 GR	1135 GR	1360 GR	845 GR	810 DF	1465 GR	1241 GR
TULLY	2479-	2328-	2311-	*2197-	2108-	2608-	1330-	1286-		
ONONDAGA LIMESTONE	2482-	2556-	2540-	2391-	2293-	2839-	1552-	1512-		2454-
CHERT										
ORISKANY	2670-			2650-?		3015-				
HELDERBERG										
KEYSER-BASS ISLAND				2670-	2546-					
SALINA				2724-	2621-	3336-				
GUELPH-LOCKPORT			3386-	3292-	3150-	3678-	2254-	2211-		3304-
BLACK WATER										
CLINTON				3575-	3407-		2512-			3565-
IRONDEQUOIT	3694-	3748-	3750-	3630-	3492-	4041-	2565-	2512-	*4096-	3643-
MEDINA	3725- Gas @3763-3879	3780- Gas @3836-3884	3780- Gas @3780-3933	3671- Gas @3698-3836	3524- Gas @3553-3600	4051- Gas @4110-4247	2605- Gas @2611-2751	2552- Gas @2577-2709	4124- Gas @4175-4238	3675- Gas @3698-3895
WHIRLPOOL	3848-	3946-	3942-	3832-	3698-	4239-	2739-	2694-	4289-	3841-
QUEENSTON	3888-	3[illegible]-	3952-	3840-	3704-	4251-	2755-	2713-	4300-	3848-
TOTAL DEPTH	4037	4047	404[illegible]	3957	3743	4311	2850	2787	4407	3911
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	381 Mcf AF 1,100 psi/48 hrs. development Waterford pool LeBoeuf field	337 Mcf AF 1,150 psi/48 hrs. extension Waterford pool LeBoeuf field	375 Mcf AF 1,180 psi/48 hrs. extension Waterford pool LeBoeuf field	750 Mcf AF 1,100 psi/3 days development Pageville pool Conneaut field	1,100 Mcf AF 1,075 psi/2 days development Lundy's Lane pool Conneaut field	291 Mcf AF 1,250 psi/48 hrs. extension New Ireland field	750 Mcf AF 870 psi/7 days development Burgess pool North East field	1,000 Mcf AF 850 psi/7 days development Burgess pool North East field	200 Mcf AF 1,200 psi/7 days Deeper pool discovery Bentley Run pool Union City field	2,500 Mcf AF 1,000 psi/72 hrs. extension Edinboro field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21187	Erie 21188	Erie 21192	Erie 21194	Erei 21195	Erie 21196	Erie 21198	Erie 21199	Erie 21200	Erie 21201
NAME OF WELL	Walter Kosienski #3-A	Paul & Grace Zarenko #2	Joseph & Florence Madden #1	Rodger Marshall #1	George Luke #1	Clifford Brown #1	Scot's Glen Dev. Corp. #1	F. C. Gebhart #1	Larimer & Norton Inc. #1	Albert Schultz #2
OPERATOR	Mutual Oil & Gas Company #M-16-P	Goe Pro. Inc.	Zodiac Resources, Incorporated	Envirogas, Inc.	Envirogas, Inc.	Berea Oil & Gas Corporation	U. S. Energy Development Corp.	Berea Oil & Gas Corporation	Berea Oil & Gas Corporation	Envirogas, Inc.
TOWNSHIP	McKean	Elk Creek	Elk Creek	North East	North East	Greenfield	Washington	Greenfield	Greenfield	North East
QUADRANGLE & MAP NUMBER	Cambridge Spgs 87 **Cambridge S NE	Girard F 561 **Albion H	Girard F 562 **Conneautville C	North East B 322 **Harborcreek F	North East A 318 **North East A	North East E 321 **Hammett C	Cambridge Spgs 99 **Edinboro North	North East E 325 **Hammett C	North East E 326 **Hammett C	North East B 327 **Harborcreek F
LATITUDE	12,400 ft. S 42°00'00"	13,800 ft. S 41°55'00"	3,650 ft. S 41°52'30"	13,700 ft. S 42°12'30"	9,000 ft. S 42°15'00"	6,050 ft. S 42°07'30"	3,800 ft. S 41°55'00"	7,650 ft. S 42°07'30"	7,760 ft. S 42°07'30"	10,200 ft. S 42°12'30"
LONGITUDE	1,400 ft. W 80°05'00"	750 ft. W 80 17'30"	5,100 ft. W 80°15'00"	250 ft. W 79°52'30"	8,800 ft. W 79°50'00"	6,100 ft. W 79°52'30"	1,250 ft. W 80°07'30"	3,300 ft. W 79°52'30"	1,220 ft. W 79°52'30"	800 ft. W 79°52'30"
DATE COMPLETED	11-9-80	10-18-80	10-10-80	12-20-80	10-28-80	12-16-80	11-7-80	12-26-80	12-31-80	1-23-81
ELEVATION	1505 GR	1200 GR	1200 GR	1000 GR	750 GR	1400 GR	1250 GR	1488 GR	1533 GR	1050 GR
TULLY	*2400-			1594-	1129-	2075-	*2254-	2180-	2233-	1404-
ONONDAGA LIMESTONE	2607-	2319-	2370-	1820-	1354-	2304-	2462-	2304-	2475-	1626-
ONONDAGA CHERT										
ORISKANY	Absent		2520-				Bois Blanc 2660-2740			
HELDERBERG										
KEYSER-BASS ISLAND	2871						2740-			
SALINA	2976-						2812-			
GUELPH-LOCKPORT	3413-				2053-		3308-	3150-	3208-	2332-
BLACK WATER										
CLINTON	3694-						3594-			
IRONDEQUOIT	3748-	3517-	3580-	2830-	2368-		3651-	3460-	3510-	2641-
MEDINA WHIRLPOOL	3770 Gas @3812-3947 3941-	3548- Gas @3587-3663 3698-	3616- Gas @3655-3722 3784-	2863- Gas @2902-3021 3010-	2398- Gas @2419-2557 2540-	3431- Gas @3416-3551	3680- Gas @3720-3850 3846-	3498- Gas @3559-3650 3641-	3557- Gas @3605-3641 3692-	2672- Gas @2700-2830 2812-
QUEENSTON	3948-	3729-	3789-	3024-	2560-	3553-	3853-	3652-	3705-	2836-
TOTAL DEPTH	4024	3745	3798	3100	2643	3643	3920	3731	3845	2914
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	2,035 Mcf AF 1,050 psi/24 hrs. development Reeds Corners field	3,200 Mcf AF 750 psi/48 hrs. extension Lundy's Lane pool Conneaut field	50 Mcf AF 350 psi/48 hrs. New pool discovery Pageville pool Conneaut field	750 Mcf AF 875 psi/7 days development Burgess pool North East field	600 Mcf AF 710 psi/7 days extension Orchard Beach pool North East field	1,600 Mcf AF 1,050 psi/3 days development Hornby pool North East field	750 Mcf AF 1,000 psi/72 hrs. extension Edinboro North field	800 Mcf AF 1,080 psi/72 hrs. development Hornby pool North East field	1,184 Mcf AF 930 psi/72 hrs. development Hornby pool North East field	400 Mcf AF 850 psi/7 days development Burgess pool North East field

COUNTY Permit Number		Erie 21202	Erie 21206	Erie 21208	Erie 21209	Erie 21210	Erie 21211	Erie 21212	Erie 21213	Erie 21214	Erie 21215
NAME OF WELL		Gilbert Kress #3	L. Evan Wing #1	Arden Stafford #1	Arden Stafford #1	Kenneth Gardner #1	Donald A. Fox #1	Nancy Smith #1	Ralph Showman #1	Ray A. Sanders #1	Luther McLallen #1
OPERATOR		Envirogas, Inc.	Appalachian Energy #AE-165	Meridian Exploration #538	Meridian Exploration #539	Meridian Exploration #540	Meridian Exploration #541	Meridian Exploration #542	Meridian Exploration #543	Meridian Exploration #544	Meridian Exploration #546
TOWNSHIP		Greenfield	Concord	Washington	Washington	Washington	Washington	Washington	Washington	Washington	Washington
QUADRANGLE & MAP NUMBER		North East F 320 **North East I	Corry O 92 **Corry G	Cambridge Spgs 89 **Cambridge S NE	Cambridge Spgs 120 **Cambridge S NE	Cambridge Spgs 9 **Cambridge S NE	Cambridge Spgs 121 **Cambridge S NE	Cambridge Spgs 122 **Cambridge S NE	Cambridge Spgs 103 **Cambridge S NE	Cambridge Spgs 96 **Cambridge S NE	Cambridge Spgs 104 **Cambridge S NE
LATITUDE		10,600 ft. S 42°10'00"	11,000 ft. S 41°55'00"	12,400 ft. S 41°57'30"	12,600 ft. S 41°57'30"	250 ft. S 41°55'00"	3,800 ft. S 41°55'00"	15,000 ft. S 42°57'30"	7,100 ft. S 41°55'00"	8,650 ft. S 41°55'00"	4,850 ft. S 41°55'00"
LONGITUDE		6,650 ft. W 79°45'00"	2,150 ft. W 79°42'30"	9,800 ft. W 80°02'30"	7,400 ft. W 80°02'30"	7,200 ft. W 80°02'30"	6,500 ft. W 80°02'30"	10,000 ft. W 80°02'30"	4,200 ft. W 80°02'30"	10,650 ft. W 80°00'00"	10,050 ft. W 80°00'00"
DATE COMPLETED		11-3-80	1-29-81	1-5-81	1-22-81	1-29-81	1-15-81	12-18-80	2-5-81	1-29-81	1-9-81
ELEVATION		1450 GR	1595 GR	1315 GR	1460 GR	1370 GR	1310 GR	1300 GR	1240 GR	1410 GR	1505 GR
TULLY			*3021-	*2332-	*2487-	*2424-	*2392-	*2339-	*2338-	*2528-	*2600-
ONONDAGA	LIMESTONE	2322-	3274-	2546-	2700-	2638-	2606-	2552-	2555-	2747-	2816-
	CHERT										
ORISKANY			3450-	Absent	Absent	Absent	Absent	Absent	Absent	2947-	Absent
HELDERBERG			3462-	2812-		2901-			2829-	2955-	3078-
KEYSER-BASS ISLAND			3504-	2839-	2962-	2921-	2822-	2818-	2850-	3020-	3104-
SALINA			3506-	2880-	3030-	2968-	2915-	2882-	2900-	3084-	3151-
GUELPH-LOCKPORT		3054-	4002-?	3314-	3461-	3399-	3380-	3325-	3346-	3552-	3612-
BLACK WATER											
CLINTON		3337-	4322-	3634-	3804-	3734-	3754-	3651-	3675-	3890-	3940-
IRONDEQUOIT		3370-	4390-	3700-	3854-	3791-	3765-	3711-	3737-	3944-	3998-
MEDINA		3403- Gas @3403-3555	4412- Gas @4589-4602	3724- Gas @3771-3905	3898- Gas @3920-4056	3838- Gas @3871-3934	3806- Gas @3832-3911	3754- Gas @3778-3912	3783- Gas @3795-3938	3966- Gas @4038-4081	4045- Gas @4080-4132
WHIRLPOOL		3543-	4588-	3898-	4049-	3990-	3964-	3907-	3936-	4140-	4198-
QUEENSTON		3569-	4604-	3907-	4058-	3997-	3972-	3915-	3944-	4147-	4207-
TOTAL DEPTH		3636	4666	4001	4162	4034	4074	4010	4054	4228	4315
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		750 Mcf AF 1,060 psi/7 days extension Bull Reservoir pool North East field	500 Mcf AF 1,075 psi/72 hrs. extension Harbor Ridge pool Concord field	412 Mcf AF 1,000 psi/7 days extension Edinboro North field	187 Mcf AF 1,020 psi/7 days development Edinboro North field	288 Mcf AF 1,070 psi/7 days development Edinboro North field	307 Mcf AF 1,110 psi/7 days development Edinboro North field	431 Mcf AF 920 psi/4 days development Edinboro North field	128 Mcf AF 1,185 psi/7 days development Edinboro North field	950 Mcf AF 1,140 psi/7 days extension Edinboro North field	1,000 Mcf AF 1,020 psi/24 hrs extension Edinboro North field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21216	Erie 21217	Erie 21218	Erie 21219	Erie 21221	Erie 21222	Erie 21224	Erie 21225	Erie 21226	Erie 21227
NAME OF WELL	Ruth A. Lewis Unit #1	Lewis G. Skelton #1	Ralph Batchelor #1	David L. Klie #1	John B. Allen Est. #1	Leon Morton #1	Harold & Barbara Goodwill #1	Jimmy Downor #1	Anna Bartyzel #1	Frank E. Downor #1
OPERATOR	Meridian Exploration #547	Meridian Exploration #548	Meridian Exploration #549	Meridian Exploration #552	Union Drilling. Inc. #688	Envirogas, Inc.	Union Drilling, Inc. #685-PC	Union Drilling, Inc. #686-PC	Union Drilling, Inc. #687	Union Drilling, Inc. #693-PC
TOWNSHIP	Washington	Washington	Washington	Washington	Union	Wayne	Union	Union	Union	Union
QUADRANGLE & MAP NUMBER	Cambridge Spgs 105 **Cambridge S NE	Cambridge Spgs 123 **Cambridge S NE	Cambridge Spgs 124 **Cambridge S NE	Cambridge Spgs106 **Cambridge S NE	Union City F 149 *Lake Canadohta	Corry A 90 **Corry A	Union City E 137 **Union City G	Union City E 138 **Lake Canadohta A	Union City F 139 **Lake Canadohta B	Union City E 152 **Lake Canadohta A
LATITUDE	4,400 ft. S 41°55'00"	10,300 ft. S 41°55'00"	2,850 ft. S 41°52'30"	11,500 ft. S 41°55'00"	900 ft. S 41°52'30"	5,150 ft. S 42°00'00"	12,850 ft. S 41°55'00"	3,550 ft. S 41°52'30"	2,300 ft. S 41°52'30"	1,100 ft. S 41°52'30"
LONGITUDE	450 ft. W 80°02'30"	1,700 ft. W 80°02'30"	7,200 ft. W 80°02'30"	10,050 ft. W 80°00'00"	9,100 ft. W 79°47'30"	10,000 ft. W 79°47'30"	1,750 ft. W 79°50'00"	4,250 ft. W 79°50'00"	7,400 ft. W 79°47'30"	2,900 ft. W 79°50'00"
DATE COMPLETED	12-31-80	2-20-81	3-31-81	2-28-81	12-11-80	12-3-80	12-16-80	1-4-81	12-18-80	12-29-80
ELEVATION	1430 GR	1235 GR	1240 GR	1370 GR	1470 GR	1710 GR	1410 GR	1600 GR	1495 GR	1575 GR
TULLY	*2528-	*2354-	*2354-	*2518-	2823-	*2738-		2936-	2854-	2898-
ONONDAGA LIMESTONE	2746-	2572-	2576-	2736-	3064-	2978-	2955-	3014-	3101-	3140-
ONONDAGA CHERT										
ORISKANY	Absent	Absent	Absent	Absent		Absent	3124-	3332-	3262-	3301-
HELDERBERG	3014-			3004-						
KEYSER-BASS ISLAND	3041-	2841-	2840-	3021-		3196-				
SALINA	3086-	2919-	2913-	3069-		3285-				
GUELPH-LOCKPORT	3537-	3375-	3386-	3542-	3870-	3826-	3774-	3954-	3870-	3981-
BLACK WATER										
CLINTON	3818-	3719-	3694-	3876-		4090-				
IRONDEQUOIT	3925-	3774-	3777-	3930-	4236-	4144-	4134-	4353-	4264-	4318-
MEDINA WHIRLPOOL	3972- Gas @4038-4064 4121-	3820- Gas @3842-3884 3969-	3827- Gas @3864-3984 3979-	3978- Gas @4047-4133 4128-	4265- Gas @4307-4427 4435-	4177- Gas @4178-4288 4330-	4166- Gas @4206-4275 4334-	4383- Gas @4462-4551 4550-	4296- Gas @4361-4470 4468-	4348- Gas @4410-4519 4516-
QUEENSTON	4129-	3977-	3988-	4138-	4448-	4347-	4348-	4566-	4484-	4534-
TOTAL DEPTH	4234	4081	4083	4244	4621	4421	4421	4481	4661	4631
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	467 Mcf AF 1,010 psi/24 hrs. development Edinboro North field	288 Mcf AF 1,120 psi/7 days development Edinboro North field	240 Mcf AF 1,125 psi/7 days development Edinboro North field	212 Mcf AF 1,140 psi/7 days extension Edinboro North field	189 Mcf AF 1,060 psi/48 hrs development Pattison pool New Ireland field	1,000 Mcf AF 1,250 psi/7 days extension Carter Hill field	440 Mcf AF 1,200 psi/48 hrs. development New Ireland field	60 Mcf AF 1,080 psi/48 hrs. extension New Ireland field	557 Mcf AF 1,250 psi/48 hrs. extension Pattison pool New Ireland field	126 Mcf AF 710 psi/48 hrs. development New Ireland field

COUNTY Permit Number	Erie 21229	Erie 21230	Erie 21231	Erie 21232	Erie 21233	Erie 21235	Erie 21236	Erie 21237	Erie 21238	Erie 21240
NAME OF WELL	Rodger Wetmore #1	David Cooper #1	Richard & Mary Smith #1	Michael & Rose Popovich #1	George & Wanda Ballog #1	Albert Froehlick #1	John Czech #1	Helen Przbysewski #1	George Pavolko #1	Walter Jankowiak #1
OPERATOR	Union Drilling, Inc. #694-PC	Union Drilling, Inc. #689-PC	Union Drilling, Inc. #695-PC	Union Drilling, Inc. #696-PC	Union Drilling, Inc. #697-PC	Mutual Oil & Gas Company #M-20-P	Mutual Oil & Gas Company #M-21-P	Mutual Oil & Gas Company #M-22-P	Zodiac Resources, Limited	Mutual Oil & Gas Company #M-25-P
TOWNSHIP	Union	Union	LeBoeuf	LeBoeuf	Union	McKean	McKean	McKean	Elk Creek	McKean
QUADRANGLE & MAP NUMBER	Union City F 150 **Lake Canadohta	Union City F 140 **Union City H	Union City E 147 **Waterford I	Union City E 148 **Waterford I	Union City E 141 **Waterford I	Cambridge Spgs 125 **Cambridge S NE	Cambridge Spgs 60 **Cambridge S NE	Cambridge Spgs 126 **Cambridge S NE	Girard F 563 **Albion I	Cambridge Spgs 185 **Cambridge S NE
LATITUDE	2,700 ft. S 41°52'30"	9,950 ft. S 41°55'00"	13,050 ft. S 41°55'00"	14,800 ft. S 41°55'00"	11,800 ft. S 41°55'00"	200 ft. S 41°57'30"	4,800 ft. S 42°00'00"	9,150 ft. S 42°00'00"	14,150 ft. S 41°55'00"	6,000 ft. S 42°00'00"
LONGITUDE	10,500 ft. W 79°47'30"	10,450 ft. W 79°47'30"	8,600 ft. W 79°52'30"	8,650 ft. W 79°52'30"	1,900 ft. W 79°52'30"	10,400 ft. W 80°02'30"	4,900 ft. W 80°05'00"	750 ft. W 80°05'00"	10,100 ft. W 80°15'00"	3,400 ft. W 80°05'00"
DATE COMPLETED	12-30-80	1-8-81	1-17-81	1-24-81	1-11-81	12-20-80	12-4-80	12-13-80	12-14-80	1-6-81
ELEVATION	1595 GR	1305 GR	1410 GR	1475 GR	1365 GR	1525 GR	1350 GR	1395 GR	1230 GR	1415 GR
TULLY	2946-	2578-	2604-	2709-	2618-	*2426-	*2164-	*2298-	2355-	*2232-
ONONDAGA LIMESTONE	3185-	2816-	2831-	2914-	2850-	2640-	2378-	2514-		2472-
ONONDAGA CHERT										
ORISKANY	3483-	2982-	3010-		3022-	Bois Blanc 2837-	Bois Blanc 2577-	Absent		
HELDERBERG										
KEYSER-BASS ISLAND						2911-	2673-	2724-		2682-
SALINA						3000-	2746-	2932-		2848-
GUELPH-LOCKPORT	3962-	3591-	3650-	3790	3632-	3471-	3190-	3341-		3243-
BLACK WATER										
CLINTON						3744-	3478-	3478-		3534-
IRONDEQUOIT	4361-	4010-	4053-	4154-	4046-	3810-	3530-	3680-	3558-	3592-
MEDINA	4391- Gas @4454-4512	4040- Gas @4100-4135	4085- Gas @4123-4252	4186- Gas @4228-4274	4076- Gas @4136-4247	3832- Gas @3859-3895	3552-	3703- Gas @3745-3879	3594- Gas @3622-3716	3614- Gas @3658-3698
WHIRLPOOL	4564-	4209-	4252-	4356-	4244-	4002-	3720-	3876-	3716-	
QUEENSTON	4576-	4224-	4266-	4368-	4256-	4009-	3730-	3886-		
TOTAL DEPTH	4686	4365	4457	4509	4387	4115	3766	3958	3737	3890
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Medina	Queenston
RESULT	198 Mcf AF 1,100 psi/48 hrs. development Pattison pool New Ireland field	516 Mcf AF 1,010 psi/48 hrs. extension Pattison pool New Ireland field	421 Mcf AF 1,125 psi/45 hrs. extension New Ireland field	1,125 Mcf AF 950 psi/48 hrs. extension New Ireland field	558 Mcf AF 1,100 psi/48 hrs. development New Ireland field	1,200 Mcf AF 1,075 psi/48 hrs. development Reeds Corners field	Dry extension Reeds Corners field	835 Mcf AF 1,075 psi/48 hrs. development Reeds Corners field	120 Mcf AF 825 psi/48 hrs. extension Lundys Lane pool Conneaut field	15 Mcf Natural 200 psi/48 hrs. development Reeds Corners field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21242	Erie 21243	Erie 21247	Erie 21248	Erie 21249	Erie 21250	Erie 21251	Erie 21256	Erie 21257	Erie 21258
NAME OF WELL	William Pennock #1	Joseph Huya #1	G. Reemsnyder #1	Edward C. Sherred Unit #1	Charles W. McCleary #1	Theodore Janoski #1	Milan Pavkov #1	Edinboro Gravel Company #2	Edinboro Gravel Company #1	Edgar Hall #1
OPERATOR	Mutual Oil & Gas Company #M-26-P	Zodiac Resources, Limited	Meridian Exploration #550	Meridian Exploration #562	Meridian Exploration #556	Meridian Exploration #557	Meridian Exploration #554	Meridian Exploration #561	Meridian Exploration #559	Meridian Exploration #553
TOWNSHIP	McKean	Elk Creek	Washington	Washington	Washington	Washington	Washington	Washington	Washington	Washington
QUADRANGLE & MAP NUMBER	Cambridge Spgs 127 **Cambridge S NE	Girard F 567 **Conneautville C	Cambridge Spgs 128 **Cambridge S NE	Cambridge Spgs 129 **Cambridge S NE	Cambridge Spgs 130 **Cambridge S NE	Cambridge Spgs 168 **Cambridge S NE	Cambridge Spgs 131 **Cambridge S NE	Cambridge Spgs 97 **Cambridge S NE	Cambridge Spgs 132 **Cambridge S NE	Cambridge Spgs 13 **Cambridge S NE
LATITUDE	14,000 ft. S 42°00'00"	700 ft. S 41°52'30"	6,180 ft. S 41°52'30"	7,800 ft. S 41°57'30"	8,700 ft. S 41°57'30"	9,600 ft. S 41°57'30"	11,900 ft. S 41°57'30"	5,800 ft. S 41°52'30"	5,700 ft. S 41°52'30"	14,400 ft. S 41°55'00"
LONGITUDE	10,000 ft. W 80°02'30"	3,000 ft. W 80°15'00"	8,100 ft. W 80°02'30"	9,880 ft. W 80°02'30"	7,600 ft. W 80°05'00"	8,350 ft. W 80°02'30"	5,700 ft. W 80°05'00"	8,500 ft. W 80°05'00"	6,600 ft. W 80°05'00"	2,100 ft. W 80°02'30"
DATE COMPLETED	1-15-81	11-18-80	4-6-81	2-14-81	2-20-81	2-6-81	3-1-81	3-9-81	3-15-81	3-24-81
ELEVATION	1500 GR	1240 GR	1300 GR	1435 GR	1450 GR	1460 GR	1470 GR	1200 GR	1200 GR	1250 GR
TULLY	*2414-		*2386-	*2440-	*2404-	*2474-	*2468-	*2299-	*2334-	*2380-
ONONDAGA LIMESTONE	2634-		2604-	2656-	2614-	2688-	2670-	2520-	2550-	2598-
ONONDAGA CHERT										
ORISKANY			Absent	Absent	Absent		Absent	Absent	Absent	Absent
HELDERBERG								2766-		
KEYSER-BASS ISLAND	2941-		2848-	2926-	2811-	2954-	2948-	2809-	2808-	2850-
SALINA	2996-		2918-	2998-	2944-	3016-	3014-	2837-	2876-	2914-
GUELPH-LOCKPORT	3440-		3432-	3396-	3378-	3445-	3450-	3340-	3381-	3404-
BLACK WATER										
CLINTON	3728-		3768-	3720-	3718-	3777-	3774-	3662-	3682-	3735-
IRONDEQUOIT	3778-	3550-	3822-	3776-	3767-	3834-	3841-	3729-	3766-	3800-
MEDINA	3801- Gas @3831-3891	3602- Gas @3673-3700	3872- Gas @3894-4030	3820- Gas @3830-3890	3808- Gas @3828-3900	3878- Gas @3900-4034	3883- Gas @3908-3957	3754- Gas @3800-3940	3814- Gas @3861-3971	3848- Gas @3870-4004
WHIRLPOOL	3970-		4023-	3968-	3960-	4028-	4035-	3931-	3968-	3997-
QUEENSTON	3978-		4033-	3975-	3969-	4036-	4043-	3943-	3978-	4006-
TOTAL DEPTH	4062	3728	4132	4075	4043	4135	4121	4039	4075	4112
DEEPEST FORMATION REACHED	Queenston	Medina	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	960 Mcf AF 1,050 psi/48 hrs. development Reeds Corners field	200 Mcf AF 950 psi/48 hrs. extension Pageville pool Conneaut field	110 Mcf AF 1,170 psi/7 days development Edinboro North field	239 Mcf AF 1,060 psi/7 days extension Reeds Corners field	238 Mcf AF 1,120 psi/6 days extension Reeds Corners field	75 Mcf AF 1,150 psi/7 days extension Reeds Corners field	313 Mcf AF 1,140 psi/7 days extension Edinboro North field	76 Mcf Natural 498 Mcf AF 1,020 psi/72 hrs. extension Edinboro field	230 Mcf AF 1,060 psi/7 days development Edinboro field	162 Mcf AF 1,150 psi/7 days development Edinboro North field

COUNTY Permit Number		Erie 21260	Erie 21262	Erie 21263	Erie 21264	Erie 21265	Erie 21266	Erie 21268	Erie 21269	Erie 21270	Erie 21271
NAME OF WELL		Neal L. Emmons #1	Carl Hunt #1	Carl Hunt #1	Marion Akin #1	Ron Oberlander #1	Edward W. Sanders #1	Dorothy Wiggers #1	W. McCray #1	Rex Warner #1	Archie Bishop #2
OPERATOR		Blackfoot Cherokee, Inc.	U. S. Energy Development Corp.	U. S. Energy Development Corp.	Vineyard Oil & Gas Company	Vineyard Oil & Gas Company	Meridian Exploration #551	Appalachian Energy #AE-199	Appalachian Energy #AE-173	Appalachian Energy #AE-198	Appalachian Energy #AE-190
TOWNSHIP		Union	Waterford	Waterford	Harborcreek	Waterford	Washington	Concord	Concord	Wayne	Wayne
QUADRANGLE & MAP NUMBER		Union City C 142 **Union City E	Union City A 169 **Waterford A	Union City A 170 **Waterford A	North East B 335 **Harborcreek F	Cambridge Spgs 159 **Cambridge S NE	Cambridge Spgs 107 **Cambridge S NE	Corry D 93 **Corry H	Corry D 94 **Corry H	Corry D 101 **Corry A	Corry D 102 **Corry D
LATITUDE		14,500 ft. S 41°57'30"	9,975 ft. S 42°00'00"	10,620 ft. S 42°00'00"	7,590 ft. S 42°12'30"	7,100 ft. S 41°57'30"	9,500 ft. S 41°55'00"	9,200 ft. S 41°55'00"	13,350 ft. S 41°55'00"	14,100 ft. S 41°57'30"	11,500 ft. S 41°57'30"
LONGITUDE		9,800 ft. W 79°47'30"	6,550 ft. W 79°57'30"	4,725 ft. W 79°57'30"	8,520 ft. W 79°52'30"	550 ft. W 80°02'30"	4,750 ft. W 80°02'30"	10,100 ft. W 79°40'00"	8,500 ft. W 79°40'00"	3,100 ft. W 79°42'30"	3,350 ft. W 79°42'30"
DATE COMPLETED		12-30-80	3-13-81	3-22-81	2-28-81	2-21-81	2-12-81	3-7-81	2-22-81	3-24-81	3-30-81
ELEVATION		1575 GR	1190 GR	1225 GR	750 GR	1470 GR	1290 GR	1510 GR	1760 GR	1460 GR	1590 GR
TULLY		2912-	2210-	2221-	1294-	*2471-	*2399-	*2930-		*2713-	*2860-
ONONDAGA	LIMESTONE	2995-	2271-	2278-	1452-	2689-	2617-	3184-		2962-	3108-
	CHERT										
ORISKANY						Absent	Absent	3364-		Absent	3310-?
HELDERBERG							40[illegible]-	4017-			
KEYSER-BASS ISLAND					1712-	2949-	2884-	3393-		3162-	3318-
SALINA					1863-	3018-	2951-	3418-		3215-	3364-
GUELPH-LOCKPORT BLACK WATER		3780-			2251-	3435-?	3409-	3906-		3705-	3860-
CLINTON					2409-	3758-	3756-	4239-	*4526-	4037-	4193-
IRONDEQUOIT		4090-	3475-	3492-	2472-	3835-	3808-	4308-	4569-	4105-	4248-
MEDINA WHIRLPOOL		4100- Gas @4235-4298 4360-	3508- Gas @3534-3670 3666-	3521- Gas @3569-3693 3685-	2490- Gas @2529-2662 2646-	3875- Gas @3869-3987 4030-	3855- Gas @3884-3950 4007-	4332- Gas @4507-4520 4505-	4593- Gas @4769-4778 4768-	4148- Gas @4221-4314 4310-	4292- Gas @4398-4450 4445-
QUEENSTON		4375-	3677-	3697-	2666-	4037-	4017-	4526-	4782-	4316-	4455-
TOTAL DEPTH		4465	3763	3760	2774	4120	4115	4570	4865	4354	4515
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		170 Mcf AF 770 psi/48 hrs. New pool discovery Emmons pool Union City field	3,100 Mcf AF 1,065 psi/2 days extension Talcott pool Erie field	3,200 Mcf AF 1,115 psi/2 days extension Talcott pool Erie field	100 Mcf AF 760 psi/3 days development Burgess pool North East field	783 Mcf AF 1,100 psi/5 days extension Swails pool Orumlin field	125 Mcf AF 1,110 psi/7 days development Edinboro North field	500 Mcf AF 1,000 psi/72 hrs. extension Harbor Ridge pool Concord field	600 Mcf AF 1,100 psi/72 hrs. extension Harbor Ridge pool Concord field	360 Mcf AF 1,150 psi/72 hrs. extension Beaver Dam pool Corry field	500 Mcf AF 1,150 psi/72 hrs. development Beaver Dam pool Corry field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21272	Erie 21273	Erie 21292	Erie 21294	Erie 21295	Erie 21300	Erie 21301	Erie 21302	Erie 21303	Erie 21304
NAME OF WELL	Kenneth Fay #1	Dennis Wade #1	Edwin Woods #1	J. Barnes #1	Raymond Sallot #1	Carl & Ester Burger #1	Lloyd Loper #1	James Glover #1	Delos Port #1	Timothy McCormick #1
OPERATOR	Appalachian Energy #AE-195	Appalachian Energy #AE-172	U. S. Energy Development Corp.	Vineyard Oil & Gas Company	Zodiac Resources, Inc.	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company
TOWNSHIP	Concord	Concord	Amity	LeBoeuf	Elk Creek	LeBoeuf	Waterford	LeBoeuf	LeBoeuf	LeBoeuf
QUADRANGLE & MAP NUMBER	Corry D 95 **Corry G	Corry D 103 **Corry	Union City C 171 **Union City	Union City D 151 **Waterford H	Girard F 564 **Conneautville C	Union City D 172 **Millers Station	Cambridge Spgs 134 **Cambridge S NE	Union City D 173 **Union City D	Union City D 174 **Union City D	Cambridge Spgs 139 **Cambridge S NE
LATITUDE	13,400 ft. S 41°55'00"	9,100 ft. S 41°55'00"	10,600 ft. S 42°00'00"	13,950 ft. S 41°55'00"	5,100 ft. S 41°52'30"	3,350 ft. S 41 52'30"	3,360 ft. S 41 57'30"	5,900 ft. S 41°55'00"	8,075 ft. S 41°55'00"	10,650 ft. S 41 55'00"
LONGITUDE	4,300 ft. W 79°42'30"	3,400 ft. W 79 42'30"	5,050 ft. W 79°45'00"	1,000 ft. W 79°55'00"	3,000 ft. W 80°15'00"	6,000 ft. W 79°57'30"	5,470 ft. W 80°02'30"	6,825 ft. W 79°57'30"	2,300 ft. W 79°57'30"	430 ft. W 80°00'00"
DATE COMPLETED	2-8-81	3-23-81	1-30-81	3-2-81	11-13-80	4-25-81	2-28-81	3-27-81	3-18-81	3-31-81
ELEVATION	1460 GR	1460 GR	1375 GR	1370 GR	1180 GR	1265 GR	1520 GR	1170 GR	1190 GR	1200 GR
TULLY		*2880-	2430-	*2584-		*2494-		*2314-	*2360-	*2362-
ONONDAGA LIMESTONE		3130-	2682-	2810-	2364-	2724-		2532-	2590-	2590-
ONONDAGA CHERT										
ORISKANY		3314-?		Absent	2690-					
HELDERBERG				2990-						
KEYSER-BASS ISLAND		3321-		3036-		2954-			2834-	2836-
SALINA		3366-		3112-		3020-			2904-	2906-
GUELPH-LOCKPORT BLACK WATER		3846-		3620-	3240-	3514-		3318-	3366-	3377-
CLINTON		4182-		3958-		3648-	*3778-	3646-	3706-	3705-
IRONDEQUOIT	*4317-	4244-	3852-	4013-	3581-	3914-	3828-	3700-	3758-	3760-
MEDINA WHIRLPOOL	4342- Gas @4433-4455 4516-	4287- Gas @4359-4443 4442-	3900- Gas @3394-4053 4040-	4036- Gas @4079-4222 4214-	3616- Gas @3669-3734 3780-	3964- Gas @3976-4053 4112-	3870- Gas @3908-3933 4020-	3747- Gas @3766-3844 3900-	3804- Gas @3833-3891 3956-	3797- Gas @3851-3895 3960-
QUEENSTON	4530-	4457-	4057-	4228-		4122-	4026-	3912-	3965-	3970-
TOTAL DEPTH	4612	4554	413	4300	3748	4206	4086	3987	4039	4038
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	450 Mcf AF 900 psi/72 hrs. development Harbor Ridge pool Concord field	300 Mcf AF 1,080 psi/72 hrs. extension Harbor Ridge pool Concord field	1.150 Mcf AF 1,230 psi/2 days extension Corry field	1,000 Mcf Natural 6,500 Mcf AF 1,350 psi/6 days development New Ireland field	3.500 Mcf AF 1.150 psi/48 hrs. extension Pageville pool Conneaut field	500 Mcf AF 1,120 psi/2 days extension Mill Village field	2,100 Mcf AF 1,180 psi/7 days extension Reeds Corners field	3,200 Mcf AF 1,200 psi/3 days extension Mill Village field	1,000 Mcf AF 1,220 psi/2 days development Mill Village field	4,100 Mcf AF 1,180 psi/3 days extension Mill Village field

COUNTY Permit Number	Erie 21305	Erie 21306	Erie 21307	Erie 21311	Erie 21312	Erie 21313	Erie 21314	Erie 21315	Erie 21316	Erie 21317
NAME OF WELL	Leon & Helen Banta #1	L. Levitt & J. Powers #1	Silas & Elsie Coon #1	David G. Rupp #1	Norman Porter #1	Victor Malinowski #1	Robert & Beatrice Brown #1	Harold & Dixie Kleinfeld #1	Lyman & Doris LeSuer #1	Paul & Marry Woods #1
OPERATOR	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company	Robert & Beatrice Brown	Larry Murphy d/b/a Pivot Petroleum	Larry Murphy d/b/a Pivot Petroleum	Larry Murphy d/b/a Pivot Petroleum
TOWNSHIP	LeBoeuf	LeBoeuf	LeBoeuf	Washington	LeBoeuf	Waterford	LeBoeuf	Franklin	Franklin	Franklin
QUADRANGLE & MAP NUMBER	Cambridge Spgs 136 **Cambridge S NE	Union City D 175 **Waterford H	Union City D 176 **Waterford G	Cambridge Spgs 137 **Cambridge S NE	Union City D 177 ****Millers Station	Union City A 178 **Waterford D	Union City D 190 **Waterford H	Cambridge Spgs 139 **Edinboro North	Cambridge Spgs 140 **Edinboro North	Cambridge Spgs 141 **Edinboro North
LATITUDE	4,150 ft. S 41°55'00"	8,250 ft. S 41°55'00"	3,890 ft. S 41°55'00"	3,450 ft. S 41°55'00"	875 ft. S 41°52'30"	7,025 ft. S 41°57'30"	10,100 ft. S 41°55'00"	160 ft. S 41°55'00"	11,800 ft. S 41°57'30"	3,825 ft. S 41°55'00"
LONGITUDE	8,460 ft. W 80°00'00"	3,600 ft. W 79°55'00"	10,100 ft. W 79°57'30"	9,600 ft. W 80°00'00"	8,780 ft. W 79°57'30"	10,740 ft. W 79°57'30"	9,400 ft. W 79°55'00"	11,250 ft. W 80°07'30"	11,200 ft. W 80°07'30"	11,260 ft. W 80°07'30"
DATE COMPLETED	3-10-81	3-9-81	3-9-81	3-17-81	4-2-81	3-24-81	6-17-81	5-14-81	5-20-81	5-27-81
ELEVATION	1515 GR	1250 GR	1390 GR	1500 GR	1155 GR	1190 GR	1260 GR	1365 GR	1390 GR	1255 GR
TULLY	*2592-	*2400-	*2500-	*2650-	*2356-	*2170-	2455-?			*2186-
ONONDAGA LIMESTONE	2810-	2628-	2723-	2850-	2590-	2390-	2665-?	*2510-	*2538-	2390-
ONONDAGA CHERT										
ORISKANY							3060-?	Absent	2815-	Absent
HELDERBERG										
KEYSER-BASS ISLAND	3076-	2874-	2980-	3098-	2836-	2600-		2787-	2830-	2672-
SALINA	3148-	2947-		3160-	2900-			2861-	2881-	2755-
GUELPH-LOCKPORT	3614-	3436-		3594-	3380			3300-	3306-	3196-
BLACK WATER										
CLINTON	3950-			3920-	3716-	3507-		3645-	3648-	3550-
IRONDEQUOIT	4002-	3829-	3894-	3986-	3772-	3568-		3692-	3708-	3597-
MEDINA	4030- Gas @4071-4110	3860- Gas @3921-3964	3924- Gas @4000-4040	4016- Gas @4070-4096	3804- Gas @3867-3900	3599- Gas @3650-3680	3891- Gas @3943-3997	3734- Gas @3769-3894	3750- Gas @3775-3909	3639- Gas @3798-3802
WHIRLPOOL	4200-	4030-	4092-	4186-	3972-	3767-	4050-	3882-	3896-	3794-
QUEENSTON	4208-	4039-	4102-	4191-	3982-	3772-		3900-	3913-	3804-
TOTAL DEPTH	4275	4125	4156	4252	4058	3858	4050	3994	3987	3900
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	2,500 Mcf AF 1,180 psi/3 days development Edinboro North field	3,000 Mcf AF 860 psi/7 days development Waterford pool LeBoeuf field	4,700 Mcf AF 1,180 psi/3 days extension Mill Village field	5,900 Mcf Natura 10,000 Mcf AF 1,160 psi/8 hrs. development Edinboro North field	3,000 Mcf AF 1,180 psi/3 days extension Mill Village field	500 Mcf AF 1,100 psi/7 days extension Swails pool Drumlin field	3,000 Mcf AF 1,200 psi/2 hrs. development Waterford pool LeBoeuf field	605 Mcf AF 1,030 psi/48 hrs. extension Franklin Center field	243 Mcf AF 1,010 psi/48 hrs. extension Franklin Center field	449 Mcf AF 1,000 psi/48 hrs. extension Franklin Center field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21318	Erie 21323	Erie 21324	Erie 21328	Erie 21329	Erie 21333	Erie 21334	Erie 21342	Erie 21344	Erie 21345
NAME OF WELL	Clarence R. Chase #1	J. & M. Koon #1	Mary Zywiec #1	Joseph Popowich #1	Frank Sisak #1	W. & J. Wurst #1	J. E. Chart #1	T. W. Wods #1	L. Kitcey #1	Ghere-Laniewicz #1
OPERATOR	Meridian Exploration #579	N.E.A. Cross Company	N.E.A. Cross Company	Goe Pro, Inc. Pivot Resources	Goe Pro, Inc.	N.E.A. Cross Company	Goe Pro, Inc.	Goe Pro, Inc. Zodiac Resources	Goe Pro, Inc. Zodiac Resources	N.E.A. Cross Company
TOWNSHIP	Washington	Washington	LeBoeuf	Elk Creek	Elk Creek	Waterford	Franklin	Elk Creek	Elk Creek	Washington
QUADRANGLE & MAP NUMBER	Cambridge Spgs 100 **Cambridge S NE	Cambridge Spgs 142 **Cambridge S NE	Union City D 179 **Waterford H	Cambridge Spgs 169 **Edinboro South	Girard F 640 **Conneautville	Cambridge Spgs 143 **Cambridge S NE	Cambridge Spgs 178 **Edinboro North	Girard F 642 **Conneautville	Girard F 643 **Albion H	Cambridge Spgs 144 **Cambridge S NE
LATITUDE	8,800 ft. S 41°55'00"	1,600 ft. S 41°55'00"	13,000 ft. S 41°55'00"	6,300 ft. S 41°52'30"	6,000 ft. S 41°52'30"	4,150 ft. S 41°57'30"	12,300 ft. S 41°57'30"	5,900 ft. S 41°52'30"	14,200 ft. S 41°55'00"	5,750 ft. S 41°55'00"
LONGITUDE	6,900 ft. W 80°02'30"	5,125 ft. W 80°05'00"	4,600 ft. W 79°55'00"	10,600 ft. W 80°12'30"	1,500 ft. W 80°15'00"	1,050 ft. W 80°00'00"	4,850 ft. W 80°12'30"	4,650 ft. W 80°15'00"	2,800 ft. W 80°17'30"	5,500 ft. W 80°02'30"
DATE COMPLETED	3-18-81	3-10-81	4-9-81	6-3-81	5-28-81	4-15-81	5-18-81	9-24-81	8-18-81	4-16-81
ELEVATION	1370 GR	1470 GR	1335 GR	1270 GR	1240 GR	1200 GR	1244 GR	1150 GR	1105 GR	1260 GR
TULLY	*2476-	*2495-	*2514-	2270-	2245-	*2092-		2114-	2068-	2360-
ONONDAGA LIMESTONE	2692-	2708-	2748-	2460-	2440-	2310-	2344-	2316-	2256-	2500-
ONONDAGA CHERT										
ORISKANY	Absent						2610-	2516-		
HELDERBERG	2960-									
KEYSER-BASS ISLAND	2986-	2978-	2980-			2574-				2850-
SALINA	3028-		3081-	3060-	3030-		3064-	2900-	2844-	
GUELPH-LOCKPORT BLACK WATER	3488-	3490-	3566-		3296-	3118-	3187-	3196-	3125-	2920-
CLINTON	3825-	3838-	3900-			3450-	3459-			3697-
IRONDEQUOIT	3879-	3880-	3956-	3690-	3360-	3506-	3515-	3546-	3460-	3750-
MEDINA WHIRLPOOL	3924- Gas @3954-4080 4076-	3910- Gas @3938-4008 4072-	3990- Gas @4048-4099 4154-	3752- Gas @3757-3842 3890-	3728- Gas @3727-3770 3860-	3535- Gas @3599-3647 3700-	3550- Gas @3581-3667 3712-	3575- Gas @3614-3620 3739-	3495- Gas @3515-3561	3780- Gas @3827-3897 3952-
QUEENSTON	4084-	4081-	4168-	3898-	3870-	3710-	3720-	3750-		3960-
TOTAL DEPTH	4176	4157	4250	3928	3909	3762	3740	3812	3745	4034
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	502 Mcf AF 1,140 psi/7 days development Edinboro North field	1,000 Mcf AF 1,160 psi/2 days extension Edinboro field	4,100 Mcf AF 1,180 psi/1 day extension Waterford pool LeBoeuf field	1,500 Mcf AF 1,000 psi/24 hrs. development Pageville pool Conneaut field	980 Mcf AF 1,000 psi/2 hrs. development Pageville pool Conneaut field	400 Mcf AF 1,180 psi/3 days extension Swails pool Drumlin field	250 Mcf AF 980 psi/24 hrs. extension Franklin Center field	750 Mcf AF 985 psi/24 hrs. development Pageville pool Conneaut field	1,250 Mcf AF 1,200 psi/2 hrs. development Lundys Lane pool Conneaut field	6,900 Mcf AF 1,200 psi/1 day development Edinboro North field

COUNTY Permit Number	Erie 21346	Erie 21347	Erie 21348	Erie 21350	Erie 21351	Erie 21352	Erie 21353	Erie 21355	Erie 21357	Erie 21358
NAME OF WELL	Ghere-Laniewicz #2	Frank Windsor #1	Michael Frontera #1	H. & J. Almazon #1	John E. Megat #1	Robert Crandell #1	D. & M. Rupp #2	Roger Niemeyer #1	D. Rupp and L. Banta #1	H. & F. Adams #1
OPERATOR	N.E.A. Cross Company	Meridian Exploration #580	Goe Pro, Inc. Blackfoot Cheroke	N.E.A. Cross Company	Goe Pro, Inc. Blackfoot Cherokee	Goe Pro, Inc. Blackfoot Cherokee	N.E.A. Cross Company	Vineyard Oil & Gas Company	N.E.A. Cross Company	N.E.A. Cross Company
TOWNSHIP	Washington	Washington	Union	LeBoeuf	Union	Concord	Washington	Venango	Washington	LeBoeuf
QUADRANGLE & MAP NUMBER	Cambridge Spgs 149 **Cambridge S NE	Cambridge Spgs 101 **Cambridge S NE	Union City H 191 **Union City	Union City D 180 **Millers Station	Union City H 181 **Union City	Union City F 182 **Lake Canadohta	Cambridge Spgs 146 **Cambridge S NE	North East H 336 **Wattsburg G	Cambridge Spgs 147 **Cambridge S NE	Union City D 183 **Millers Station
LATITUDE	5,750 ft. S 41°55'00"	11,300 ft. S 41°55'00"	1,250 ft. S 41°55'00"	3,425 ft. S 41°52'30"	12,000 ft. S 41°55'00"	625 ft. S 41°52'30"	7,150 ft. S 41°55'00"	4,150 ft. S 42°02'30"	6,200 ft. S 41°55'00"	5,750 ft. S 41°52'30"
LONGITUDE	4,080 ft. W 80°02'30"	9,800 ft. W 80°02'30"	450 ft. W 79°47'30"	10,600 ft. W 79°55'00"	5,800 ft. W 79°47'30"	960 ft. W 79°45'00"	11,090 ft. W 80°00'00"	9,100 ft. W 79°50'00"	9,840 ft. W 80°00'00"	5,700 ft. W 79°57'30"
DATE COMPLETED	5-18-81	4-14-81	4-18-81	5-15-81	5-7-81	4-27-81	4-25-81	7-14-81	5-12-81	5-3-81
ELEVATION	1230 GR	1440 GR	1450 GR	1440 GR	1350 GR	1525 GR	1410 GR	1495 GR	1430 GR	1240 GR
TULLY	*2340-	*2552-		2700-	2688-		2524-	2252-		
ONONDAGA LIMESTONE	2560-	2767-		2925-	2926-		2750-	2417-	2780-	2783-
ONONDAGA CHERT										
ORISKANY		Absent								
HELDERBERG		3018-								
KEYSER-BASS ISLAND	2822-	3038-						2669-		
SALINA	2892-	3086-			3470-			2783-		
GUELPH-LOCKPORT	3346-	3568-						3299-		
BLACK WATER										
CLINTON	3678-	3900-						3507-		
IRONDEQUOIT	3740-	3955-	4136-	4120-	4108-	4350-	3942-	3619-	3970-	3924-
MEDINA WHIRLPOOL	3770- Gas @3808-3855 3937-	4003- Gas @4014-4160 4154-	4188- Gas @4191-4271 4316-	4150- Gas @4218-4248 4320-	4174- Gas @4192-4268 4308-	4408- Gas @4335-4486 4540-	3972- Gas @4014-4080 4140-	3654- Gas @3768-3892 3850-	4000- Gas @4034-4108 4170-	3956- Gas @4013-4131 4124-
QUEENSTON	3946-	4163-	4334-	4332-	4323-	4554-	4149-	3890-	4178-	4136-
TOTAL DEPTH	4047	4235	4378	4394	4374	4633	4232	3954	4264	4181
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	3,500 Mcf AF 1,180 psi/2 days development Edinboro North field	184 Mcf AF 1,040 psi/7 days development Edinboro North field	310 Mcf AF 1,050 psi/2 hrs. extension Bentley Run pool Union City field	500 Mcf AF 1,200 psi/2 days extension Mill Village field	475 Mcf AF 1,000 psi/2 hrs. development Pattison pool New Ireland field	300 Mcf AF 900 psi/2 hrs. extension Harbor Ridge pool Concord field	1,800 Mcf AF 1,180 psi/1 day development Edinboro North field	1,354 Mcf AF 1,040 psi/3 days extension Dennee pool Phillipsville field	500 Mcf AF 1,100 psi/10 days development Edinboro North field	500 Mcf AF 1,200 psi/7 days extension Mill Village field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21362	Erie 21363	Erie 21369	Erie 21370	Erie 21378	Erie 21379	Erie 21380	Erie 21382	Erie 21383	Erie 21384
NAME OF WELL	Presque Isle Beagle Club #2	Arthur Rose #1	Irving Olds & Yvonne Murphy #1	Jacob Hansen #1	Ernest Babcock #1	Elmer & Dora Krizo #1	Presque Isle Beagle Club #1	Theodore Ethridge #1	Earl G. Klakamp #1	Ezra & Louise Snyder #1
OPERATOR	Envirogas, Inc.	Envirogas, Inc.	N.E.A. Cross Company	N.E.A. Cross Company	Goe Pro, Inc. Blackfoot Cherokee	Goe Pro, Inc.	Envirogas, Inc.	N.E.A. Cross Company	N.E.A. Cross Company	N.E.A. Cross Company
TOWNSHIP	Waterford	Waterford	Washington	LeBoeuf	Concord	Concord	Waterford	LeBoeuf	Washington	Washington
QUADRANGLE & MAP NUMBER	Union City A 194 **Waterford 8	Union City B 192 **Waterford F	Cambridge Spgs 148 **Cambridge S NE	Union City D 184 **Waterford H	Union City F 185 **Union City I	Corry G 104 **Corry	Union City B 193 **Waterford G	Union City D 186 **Millers Station	Cambridge Spgs 149 **Cambridge S NE	Cambridge Spgs 150 **Cambridge S NE
LATITUDE	13,800 ft. S 42°00'00"	2,550 ft. S 41°57'30"	5,000 ft. S 41°55'00"	13,000 ft. S 41°55'00"	13,800 ft. S 41°55'00"	13,625 ft. S 41°55'00"	13,950 ft. S 42°00'00"	750 ft. S 41°52'30"	4,550 ft. S 41°52'30"	3,910 ft. S 41°52'30"
LONGITUDE	350 ft. W 79°55'00"	11,050 ft. W 79°52'30"	160 ft. W 80°05'00"	2,875 ft. W 79°55'00"	150 ft. W 79°45'00"	9,500 ft. W 79°42'30"	9,100 ft. W 79°52'30"	250 ft. W 79°57'30"	9,100 ft. W 80°02'30"	1,080 ft. W 80°05'00"
DATE COMPLETED	8-1-81	7-11-81	5-24-81	6-23-81	5-17-81	5-25-81	7-18-81	5-27-81	7-3-81	6-7-81
ELEVATION	1430 GR	1355 GR	1450 GR	1285 GR	1540 GR	1505 GR	1405 GR	1300 GR	1260 GR	1465 GR
TULLY	*2364-	*2338-	2538-	2486-	2988-	2968-	*2357-	2530-	2386-	2618-
ONONDAGA LIMESTONE	2588-	2562-	2751-	2711-	3230-	3213-	2585-	2752-	2600-	2832-
ONONDAGA CHERT										
ORISKANY	2837-	2800-					2828-			
HELDERBERG										
KEYSER-BASS ISLAND	2850-	2813-					2835-			
SALINA	2936-	2896-			3756-	3722-	2911-			
GUELPH-LOCKPORT	3463-	3440-			3964-	3984-	3451-			
BLACK WATER										
CLINTON	3730-	3710-			4250-	4234-	3716-			
IRONDEQUOIT	3784-	3759-	3926-	3920-	4356-	4340-	3768-	3950-	3816-	4045-
MEDINA WHIRLPOOL	3820- Gas @3844-3986 3968-	3785- Gas @3818-3962 3946-	3968- Gas @4005-4051 4131-	3950- Gas @4010-4068 4118-	4420- Gas @4453-4518 4556-	4384- Gas @4455-4508 4540-	3804- Gas @3824-3965 3950-	3980- Gas @4046-4100 4152-	3850- Gas @3892-3971 4020-	4076 Gas @4113-4164 4246-
QUEENSTON	3988-	3965-	4140-	4132-	4572-	4556-	3970-	4162-	4028-	4254-
TOTAL DEPTH	4104	4051	4229	4221	4647	4634	4073	4230	4102	4339
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	1,560 Mcf AF 1,035 psi/10 days extension Waterford pool LeBoeuf field	1,000 Mcf AF 1,045 psi/10 days extension Waterford pool LeBoeuf field	1,800 Mcf AF 1,180 psi/2 days development Edinboro North field	500 Mcf AF 1,160 psi/3 days development New Ireland field	375 Mcf AF 1,100 psi/2 hrs extension Harbor Ridge pool Concord field	360 Mcf AF 1,100 psi/2 hrs. extension Harbor Ridge pool Concord field	500 Mcf AF 955 psi/10 days extension Waterford pool LeBoeuf field	500 Mcf AF 1,180 psi/7 days extension Mill Village field	1,000 Mcf AF 1,180 psi/2 days development Edinboro North field	500 Mcf AF 1,100 psi/7 days extension Edinboro field

COUNTY Permit Number		Erie 21385	Erie 21386	Erie 21387	Erie 21390	Erie 21391	Erie 21392	Erie 21393	Erie 21394	Erie 21396	Erie 21397
NAME OF WELL		Rose & Robert Zimmer #1	Thomas Coffin #1	A. Wethli #1	Otis K. Reed #2	Otis K. Reed #1	Glade E. Wright #1	James E. Hobbs #1	Reva C. Revak #2	William Abplanalp #1	Julia Yeager #1
OPERATOR		N.E.A. Cross Company	C. P. & C. Associates	Enviroqas, Inc.	Meridian Exploration #563	Meridian Exploration #558	Meridian Exploration #555	Meridian Exploration #560	Cardinal Oil Company	Goe Pro, Inc. Zodiac Resources	Goe Pro, Inc. Renaissance
TOWNSHIP		Washington	LeBoeuf	Waterford	Washington	Washington	Washington	Washington	Elk CReek	Elk Creek	Union
QUADRANGLE & MAP NUMBER		Cambridge Spgs 151 **Cambridge S NE	Union City O 187 **Waterford G	Union City A 195 **Waterford E	Cambridge Spgs155 **Cambridge S NE	Cambridge Spgs 156 **Cambridge S NE	Cambridge Spgs 157 **Cambridge S NE	Cambridge Spgs 158 **Cambridge S NE	Girard F 612 **Conneautville C	Cambridge Spgs 170 **Edinboro South	Union City E 188 **Union City
LATITUDE		14,850 ft. S 41°55'00"	6,000 ft. S 41°55'00"	5,300 ft. S 41°57'30"	1,850 ft. S 41°52'30"	4,500 ft. S 41°52'30"	1,000 ft. S 41°52'30"	7,300 ft. S 41°52'30"	8,640 ft. S 41°52'30"	6,100 ft. S 41°52'30"	10,125 ft. S 41°57'30"
LONGITUDE		2,275 ft. W 80°05'00"	11,175 ft. W 79°57'30"	600 ft. W 79°55'00"	4,450 ft. W 80°05'00"	4,500 ft. W 80°05'00"	1,900 ft. W 80°05'00"	2,100 ft. W 80°05'00"	4,650 ft. W 80°15'00"	9,500 ft. W 80°12'30"	9,300 ft. W 79°47'30"
DATE COMPLETED		6-1-81	7-3-81	8-8-81	6-24-81	6-16-81	6-9-81	6-30-81	6-7-81	6-10-81	7-3-81
ELEVATION		1470 GR	1200 GR	1340 GR	1370 GR	1290 GR	1485 GR	1320 GR	1150 GR	1296 GR	1604 GR
TULLY		2580-	2330-	*2350-	*2504-	*2430-	*2614-	*2506-	*2135-	2309-	2752-
ONONDAGA	LIMESTONE	2800-	2544-	2574-	2720-	2644-	2830-	2726-	2338-	2506-	2992-
	CHERT										
ORISKANY				Bois Blanc 2756-	Absent	Absent	Absent	Absent	2562-	2680-	
HELDERBERG											
KEYSER-BASS ISLAND				2814-	2977-	2897-	3086-	2972-	2614-		
SALINA				2896-	3044-	2966-	3152-	3040-	2662-	3108-	3572-
GUELPH-LOCKPORT				3442-	3536-	3462-	3644-	3550-	3234-	3340-	3809-
BLACK WATER											
CLINTON				3706-	3869-	3798-	3982-	3856-	3482-		4058-
IRONDEQUOIT		3996-	3722-	3762-	3922-	3852-	4034-	3939-	3578-	3720-	4180-
MEDINA WHIRLPOOL		4026- Gas @4061-4129 4193-	3742- Gas @3815-3862 3924-	3787- Gas @3819-3962 3944-	3968- Gas @3993-4085 4124-	3900- Gas @3928-3977 4052-	4082- Gas @4112-4157 4232-	3988- Gas @4007-4093 4140-	3614- Gas @3656-3784	3756- Gas @3788-3841 3924-	4228- Gas @4241-4320 4364-
QUEENSTON		4200-	3933-	3965-	4132-	4060-	4242-	4150-	3788-	3936-	4380-
TOTAL DEPTH		4274	4007	4067	4225	4125	4379	4201	3850	3970	4452
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		400 Mcf AF 1,120 psi/7 days development Edinboro North field	2,800 Mcf Natural 11,000 Mcf AF 1,200 psi/2 days development Mill Village field	1,270 Mcf AF 940 psi/10 days development Waterford pool LeBoeuf field	124 Mcf AF 1,100 psi/7 days development Edinboro field	177 Mcf AF 1,100 psi/7 days development Edinboro field	485 Mcf AF 1,140 psi/7 days extension Edinboro field	125 Mcf AF 1,200 psi/7 days extension Edinboro field	115 Mcf AF 1,000 psi/48 hrs. development Pageville pool Conneaut field	1,100 Mcf AF 1,100 psi/2 hrs. extension Pageville pool Conneaut field	3,500 Mcf AF 1,300 psi/2 hrs. extension Emmons pool Union City field

Figure 32. (Continued)

COUNTY Permit Number	Erie 21398	Erie 21399	Erie 21400	Erie 21401	Erie 21402	Erie 21415	Erie 21416	Erie 21430	Erie 21436	Erie 21440
NAME OF WELL	J. A. Harrington #1	John Rausch #1	Frank Sisak #1	J. Weaver #1	Dennis Roth #1	Theodore Kielar #1	Dennis Roth #2	George Bartko #1	Robert D. Schenk #1	George Kirik #1
OPERATOR	Goe Pro, Inc.	Goe Pro, Inc.	Geo Pro, Inc.	Goe Pro, Inc.	Envirogas, Inc.	Envirogas, Inc.	Envirogas, Inc.	Goe Pro, Inc.	Goe Pro, Inc Renaissance	Goe Pro, Inc. Renaissance
TOWNSHIP	Conneaut	Conneaut	Conneaut	Conneaut	Wayne	Wayne	City of Corry	Elk Creek	Union	Union
QUADRANGLE & MAP NUMBER	Girard D 623 **Beaver Center	Girard E 624 **Beaver Center	Girard D 625 **E. Springfield	Girard D 644 **Beaver Center	Cory F 107 **Corry	Corry E 108 **Corry	Corry B 109 **Columbus D	Girard E 613 **Albion H	Union City E 189 **Union City	Union City 196 **Union City
LATITUDE	650 ft. S 41°52'30"	1,125 ft. S 41°52'30"	6,750 ft. S 41°55'00"	800 ft. S 41°52'30"	6,000 ft. S 41°57'30"	13,150 ft. S 41°57'30"	13,000 ft. S 41°57'30"	3,240 ft. S 41°55'00"	9,250 ft. S 41°57'30"	7,850 ft.S 41°57'30"
LONGITUDE	200 ft. W 80°25'00"	7,600 ft. W 80°22'30"	7,000 ft. W 80°25'00"	8,650 ft. W 80°25'00"	7,950 ft. W 79°37'30"	6,800 ft. W 79°40'00"	8,450 ft. W 79°35'00"	7,300 ft. W 80°17'30"	8,400 ft. W 79°47'30"	9,300 ft. W 79°47'30"
DATE COMPLETED	7-11-81	7-3-81	6-25-81	6-30-81	6-18-81	6-27-81	6-26-81	6-17-81	7-11-81	7-17-81
ELEVATION	870 GR	850 GR	900 GR	950 GR	1490 GR	1415 GR	1390 GR	1082 GR	1472 GR	1585 GR
TULLY	1770-	1740-	1714-	1834-	*2760-	*2751-	*2731-			2714-
ONONDAGA LIMESTONE	1939-	1913-	1879-	2870-	3017-	3005-	3010-		2870-	2956-
ONONDAGA CHERT										
ORISKANY	2135-	2150-	2146-		Absent	Absent	Absent			
HELDERBERG										
KEYSER-BASS ISLAND					3218-	3203-	3190-			
SALINA	2258-	2514-	2256-	2380-	3280-	3255-	3263-		3440-?	3532-
GUELPH-LOCKPORT	3840-	2790-	2754-	3784-	3776-	3803-	3840-	Gas	3714-	3744-
BLACK WATER										
CLINTON	3043-		3006-		4102-	4061-	4107-		3916-	4018-
IRONDEQUOIT	3151-	3128-	3097-	3214-	4163-	4125-	4166-		4046-	4126-
MEDINA WHIRLPOOL	3177- Gas @3205-3271 3337-	3184- Gas @3198-3276 3328-	3136- Gas @3170-3248 3282-	3256- Gas @3298-3324 3412-	4207- Gas @4230-4363 4354-	4173- Gas @4198-4330 4318-	4211- Gas @4245-4378 4369-		4096- Gas @4134-4188 4228-	4170- Gas @4215-4282 4321-
QUEENSTON	3352-	3335-	3301-	3421-	4371-	4335-	4388-		4242-	4336-
TOTAL DEPTH	3378	3410	3346	3460	4450	4422	4473	3063	4221	4393
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Lockport	Queenston	Queenston
RESULT	750 Mcf AF 900 psi/2 days development Bushnell-Lexington pool Conneaut field	760 Mcf AF 1,050 psi/2 hrs. development Bushnell-Lexington pool Conneaut field	1,200 Mcf AF 875 psi/2 hrs. development Bushnell-Lexington pool Conneaut field	250 Mcf AF 850 psi/2 days development Bushnell-Lexington pool Conneaut field	500 Mcf AF 1,235 psi/10 days extension Spencer Creek pool Corry field	500 Mcf AF 825 psi/10 days extension Beaver Dam pool Corry field	1,440 Mcf AF 1,250 psi/10 days New pool discovery Hare Creek pool Columbus field	20,000 Mcf Nat. 1,250 psi/30 hrs. Shallower pool discovery Cranesville pool Conneaut field	550 Mcf AF 1,150 psi/2 hrs. development Emmons pool Union City field	367 Mcf AF 1,100 psi/2 hrs. development Emmons pool Union City field

COUNTY Permit Number		Erie 21441	Erie 21442	Erie 21443	Erie 21444	Erie 21445	Erie 21446	Erie 21450	Erie 21453	Erie 21454	Erie 21464
NAME OF WELL		Ron Simpson #1	Phyllis Simpson #1	William Snyder #1	Arlo & Vivian Potter #1	J. Mazur #1	Conneaut Valley Farms #1	Frank Curtze C. Scarlett #1	William P. Rehm #2	Herbert Yosten #3	L. Didion #1
OPERATOR		Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Northwest Natural Gas Company	Envirogas, Inc.	Goe Pro, Inc.	Meridian Exploration #578	Kaltsas Oil Company	Kaltsas Oil Company	Goe Pro, Inc.
TOWNSHIP		Conneaut	Conneaut	Conneaut	Conneaut	Waterford	Conneaut	Washington	Greenfield	Greenfield	Elk Creek
QUADRANGLE & MAP NUMBER		Girard O 626 **Beaver Center	Girard D 627 **Beaver Center	Girard 641 **Beaver Center	Girard 671 **Conneautville	Union City 197 **Waterford	Girard 645 **Beaver Center	Cambridge Spgs 171 **Edinboro North	North East 338 **Hammett	North East 339 **Hammett	Cambridge Spgs 179 **Edinboro South
LATITUDE		4,550 ft. S 41°52'30"	4,650 ft. S 41°52'30"	6,100 ft. S 41°52'30"	8,250 ft. W 41°52'30"	4,750 ft. S 41°57'30"	5,300 ft. S 41°52'30"	9,100 ft. S 41°55'00"	3,800 ft. S 42°07'30"	7,600 ft. S 42°07'30"	6,800 ft. S 41°52'30"
LONGITUDE		3,250 ft. W 80°25'00"	1,750 ft. W 80°25'00"	1,900 ft. W 80°25'00"	10,800 ft. W 80°20'00"	8,550 ft. W 79°52'30"	10,050 ft. W 80°22'30"	1,100 ft. W 80°07'30"	1,650 ft. W 79°52'30"	4,750 ft. W 79°52'30"	5,250 ft. W 80°12'30"
DATE COMPLETED		7-15-81	7-30-81	7-21-81	8-7-81	7-25-81	9-30-81	7-11-81	8-1-81	8-8-81	9-30-81
ELEVATION		922 GR	891 GR	890 GR	1060 GR	1330 GR	853 GR	1245 GR	1485 GR	1439 GR	1315 GR
TULLY		1830-		1835-	2060-	*2340-	1772-	*2284-	2150-	2118-	2336-
ONONDAGA	LIMESTONE	1998-		2002-	2234-	2564-	1934-	2496-		2344-	2540-
	CHERT										
ORISKANY						2812-		Absent			2740-
HELDERBERG											
KEYSER-BASS ISLAND					2494-	2820-		2759-			
SALINA		2565-?		2600-	2672-	2883-	2544-	2830-	2950-	2714-	
GUELPH-LOCKPORT		2880-		2870-	3080-	3438-		3294-		3086-	3424-
BLACK WATER											
CLINTON					3340-	3692-		3634-			
IRONDEQUOIT		3212-	3166-	3204-		3759-	3152-	3693-	3418-	3400-	3764-
MEDINA WHIRLPOOL		3260- Gas @3298-3333 3410-	3218- Gas @3230-3316 3360-	3256- Gas @3265-3318 3394-	3452- Gas @3474-3544	3790- Gas @3816-3956 3951-	3200- Gas @3218-3258 3342-	3740- Gas @3772-3900 3892-	3464- Gas @3607-3477 3592-	3412- Gas @3463-3585 3580-	3814- Gas @3850-3921
QUEENSTON		3424-	3378-	3415-		3964-		3900-	3610-	3590-	
TOTAL DEPTH		3437	3426	3417	3678	4039	3352	4000	3692	3651	3980
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		750 Mcf AF 950 psi/2 days development Bushnell-Lexington pool Conneaut field	850 Mcf AF 1,020 psi/24 hrs. development Bushnell-Lexington pool Conneaut field	800 Mcf AF 950 psi/24 hrs. development Bushnell-Lexington pool Conneaut field	850 Mcf AF 1,005 psi/? days development Lundys Lane pool Conneaut field	750 Mcf AF 1,170 psi/10 days extension Waterford pool LeBoeuf field	1,100 Mcf AF 950 psi/24 hrs. development Bushnell-Lexington pool Conneaut field	130 Mcf AF 1,110 psi/7 days development Edinboro field	1,200 Mcf AF 1,050 psi/? development Hornby pool North East field	3,000 Mcf AF 1,050 psi/3 days development Hornby pool North East field	300 Mcf AF 950 psi/24 hrs. extension Pageville pool Conneaut field

Figure 32. *(Continued)*

COUNTY Permit Number		Erie 21466	Erie 21467	Erie 21468	Erie 21469	Erie 21471	Erie 21472	Erie 21473	Erie 21474	Erie 21475	Erie 21482
NAME OF WELL		A. M. Graves #1	John Rausch, Jr. #1	Jack Wilson #1	A. G. Ward #1	Therasse Unit #1	Bruce Batchelor #1	Martin Arnemam #1	E. L. Dean #1	G. Zaczyk #1	W. McCartney #1
OPERATOR		Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Meridian Exploration #591	Meridian Exploration #590	Meridian Exploration #582	Goe Pro, Inc.	Goe Pro, Inc.	Envirogas, Inc.
TOWNSHIP		Conneaut	Conneaut	Conneaut	Elk Creek	Washington	Washington	Washington	Elk Creek	Elk Creek	Waterford
QUADRANGLE & MAP NUMBER		Girard E 628 **Beaver Center	Girard E 629 **Beaver Center	Girard E 630 **Beaver Center	Girard 646 **Albion	Cambridge Spgs 177 **Cambridge S NE	Cambridge Spgs 172 **Cambridge S NE	Cambridge Spgs 173 **Cambridge S NE	Girard 647 **Albion	Girard 648 **Albion	Union City 198 **Waterford
LATITUDE		1,125 ft. S 41°52'30"	2,700 ft. S 41°52'30"	3,150 ft. S 41°52'30"	4,050 ft. S 41°55'00"	9,500 ft. S 41°55'00"	3,700 ft. S 41°52'30"	8,300 ft. S 41°52'30"	200 ft. S 41°55'00"	13,000 ft. S 41°55'00"	11,550 ft. S 42°00'00"
LONGITUDE		5,350 ft. W 80°22'30"	8,550 ft. W 80°22'30"	6,250 ft. W 80°22'30"	1,550 ft. W 80°17'30"	750 ft. W 80°05'00"	6,400 ft. W 80°05'00"	3,600 ft. W 80°05'00"	4,300 ft. W 80°17'30"	5,100 ft. W 80°15'00"	5,850 ft. W 79°52'30"
DATE COMPLETED		8-17-81	8-12-81	8-10-81	9-21-81	8-28-81	8-23-81	8-17-81	9-21-81	9-2-81	8-16-81
ELEVATION		868 GR	850 GR	893 GR	1125 GR	1470 GR	1250 GR	1188 KB	1108 GR	1210 GR	1400 GR
TULLY		1770-	1756-	1810-	2000-	*2558-	*2382-	*2348-	1958-	2170-	2336-
ONONDAGA	LIMESTONE	1940-	1922-	1978-	2190-	2770-	2600-	2568-	2150-	2364-	2560-
	CHERT										
ORISKANY				2222-		Absent	Absent	Bois Blanc 2742-	2404-	2577-	2799-
HELDERBERG											
KEYSER-BASS ISLAND						3026-	2850-	2808-			
SALINA		2540-	2530-	2580-	2800-	3093-	2916-	2876-	2770-	2944-	2937-
GUELPH-LOCKPORT		2800-	2800-	2850-	3042-	3550-	3416-	3438-	3012-	3210-	3428-
BLACK WATER											
CLINTON						3903-	3752-	3698-			3696-
IRONDEQUOIT*		3146-	3138-	3187-	3372-	3955-	3805-	3780-	3342-	3548-	3750-
MEDINA		3190- Gas @3220-3296	3200- Gas @3212-3286	3236- Gas @3283-3336	3432- Gas @3470-3487	4001- Gas @4036-4076	3853- Gas @3876-3924	3831- Gas @3841-3904	3400- Gas @3407-3489	3595- Gas @3616-3662	3778- Gas @3817-3949
WHIRLPOOL		3335-	3332-	3386-	3544-	4151-	4005-	3982-	3540-	3744-	3940-
QUEENSTON		3356-	3344-	3400-	3564-	4160-	4013-	3990-	3546-	3754-	3954-
TOTAL DEPTH		3356	3352	3418	3583	4298	4125	4065	3568	3776	4054
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		900 Mcf AF 1,010 psi/29 hrs. development Bushnell-Lexington pool Conneaut field	875 Mcf AF 950 psi/24 hrs. development Bushnell-Lexington pool Conneaut field	1,000 Mcf AF 1,000 psi/24 hrs. development Bushnell-Lexington pool Conneaut field	1,200 Mcf AF 760 psi/24 hrs. development Lundys Lane pool Conneaut field	269 Mcf AF 1,110 psi/7 days development Edinboro North field	140 Mcf AF 1,150 psi/7 days development Edinboro field	244 Mcf AF 1,180 psi/7 days development Edinboro field	1,500 Mcf AF 870 psi/24 hrs. development Lundys Lane pool Conneaut field	1,750 Mcf AF 1,175 psi/2 hrs. extension Pageville pool Conneaut field	1,000 Mcf AF 1,150 psi/10 days extension Waterford pool LeBoeuf field

COUNTY Permit Number		Erie 21484	Erie 21485	Erie 21487	Erie 21494	Erie 21497	Erie 21498	Erie 21501	Erie 21505	Erie 21506	Erie 21522
NAME OF WELL		Pearl Osterburg #2	Pearl Osterburg #1	Charles O. McGraw #1	C. Bendig #1	A. Rose #2	R. Ormsbee #1	John T. Afton #2	Frank J. Patalon #1	Frank J. Patalon #2	G. Miller #1
OPERATOR		Meridian Exploration #587	Meridian Exploration #586	Goe Pro, Inc.	Envirogas, Inc.	Envirogas, Inc.	Envirogas, Inc.	Kaltsas Oil Company	Kaltsas Oil Company	Kaltsas Oil Company	Goe Pro, Inc.
TOWNSHIP		Washington	Washington	Elk Creek	Amity	Waterford	Waterford	Venango	Venango	Venango	Elk Creek
QUADRANGLE & MAP NUMBER		Cambridge Spgs 174 **Cambridge S NE	Cambridge Spgs 180 **Cambridge S NE	Cambridge Spgs 181 **Edinboro South	Union City 199 **Waterford	Union City 201 **Waterford	Union City 202 **Waterford	North East 340 **Hammett	North East 341 **Wattsburg	North East 342 **Wattsburg	Girard 649 **Albion
LATITUDE		4,150 ft. S 41 55'00"	2,400 ft. S 41°55'00"	1,550 ft. S 41 52'30"	7,850 ft. S 42°00'00"	1,950 ft. S 41 57'30"	3,950 ft. S 41 57'30"	14,800 ft. S 42°07'30"	320 ft. S 42°05'00"	14,100 ft. S 42°07'30"	14,900 ft. S 41°57'30"
LONGITUDE		9,000 ft. W 80°05'00"	9,200 ft. W 80°05'00"	7,400 ft. W 80 12'30"	3,550 ft. W 79°52'30"	9,250 ft. W 79°52'30"	1,750 ft. W 79 55'00"	6,700 ft. W 79°52'30"	7,750 ft. W 79°50'00"	7,000 ft. W 79°50'00"	9,860 ft. W 80°15'00"
DATE COMPLETED		9-3-81	9-12-81	9-10-81	8-22-81	8-28-81	9-4-81	8-29-81	8-24-81	9-4-81	9-17-81
ELEVATION		1340 GR	1320 GR	1285 GR	1335 GR	1360 GR	1335 GR	1359 GR	1415 GR	1369 GR	1995 GR
TULLY		*2375-	*2345-	2298-	2255-	2350-	2327-	2056-	2200-	2136-	2088-
ONONDAGA	LIMESTONE	2586-	2555-	2592-	2483-	2577-	2550-	2316-	2430-	2360-	2288-
	CHERT										
ORISKANY		Absent	Absent	2684-	Absent						
HELDERBERG											
KEYSER-BASS ISLAND		2866-	2830-		2724-	2812-	2786-				
SALINA		2944-	2900-		2810-	2955-	2933-	2680-	2768-	2700-	
GUELPH-LOCKPORT		3380-	3340-	3350-	3339-	3452-	3418-		3152-	3010-	3258-
BLACK WATER											
CLINTON		3715-	3678-		3593-	3716-	3687-				
IRONDEQUOIT		3766-	3726-	3681-	3658-	3767-	3739-	3368-	3462-	3388-	3597-
MEDINA		3810- Gas @3854-3882	3763-	3709- Gas @3748-3792	3681- Gas @3717-3797	3805- Gas @3836-3970	3768- Gas @3796-3870	3380- Gas @3438-3558	3474- Gas @3570-3650	3400- Gas @3463-3515	3645- Gas @3668-3702
WHIRLPOOL		3960-	3921-	3880-	3841-	3959-	3922-	3550-	3644-	3570-	3734-(Tracy)
QUEENSTON		3969-	3929-	3890-	3853-	3973-	3941-	3560-	3654-	3582-	
TOTAL DEPTH		4068	4037	3934	3967	4057	4027	3595	3723	3627	3798
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		323 Mcf AF 1,250 psi/7 days development Edinboro field	Dry and plugged development Edinboro field	4,750 Mcf AF 1,150 psi/2 hrs. extension Pageville pool Conneaut field	1,000 Mcf AF 1,115 psi/10 days extension Waterford pool LeBouef field	1,500 Mcf AF 1,135 psi/10 days development LeBouef field	386 Mcf AF 900 psi/10 days development LeBoeuf field	2,500 Mcf AF 1,180 psi/3 days extension Hornby pool North East field	1,600 Mcf AF 1,020 psi/3 days extension Hornby pool North East field	900 Mcf AF 1,065 psi/3 days development Hornby pool North East field	7,750 Mcf AF 1,150 psi/2 hrs. extension Lundys Lane pool Conneaut field

Figure 32. *(Continued)*

COUNTY Permit Number	Erie 21543	Erie 21544	Erie 21545	Erie 21549	Erie 21553	Erie 21556	Erie 21638	Fayette 20259	Indiana 25826	Indiana 26193
NAME OF WELL	O. Schultz #1	R. H. Woomer #1	D. Wickwire #1	John Kulyk #1	A. Jones #1	Arlo & Vivian Potter #2	John Showman #1	Mary M. DuPree, et al #1	Joseph Vehovic #2	Leota Warr #1
OPERATOR	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Goe Pro, Inc.	Northwest Natural Gas Company	Meridian Exploration #589	Amoco Production/ Ashtola Production	Felmont Oil Corporation #274	Pennzoil Company
TOWNSHIP	Conneaut	Elk Creek	Conneaut	Conneaut	Conneaut	Conneaut	Washington	Springfield	Pine	Green
QUADRANGLE & MAP NUMBER	Girard 650 **Beaver Center	Girard 651 **Conneautville	Girard 652 **E. Springfield	Girard 653 **E. Springfield	Girard 654 **Beaver Center	Girard 672 **Beaver Center	Cambridge Spgs 186 **Cambridge S NE	Confluence B 17 **Mill Run C	Barnesboro F 46 **Strongstown B	Barnesboro A 47 **Commodore
LATITUDE	7,400 ft. S 41°52'30"	5,000 ft. S 41°52'30"	14,500 ft. S 41°55'00"	12,450 ft. S 41°55'00"	4,650 ft. S 41°52'30"	8,500 ft. S 41°52'30"	3,900 ft. S 41°55'00"	2,600 ft. S 40°00'00"	13,650 ft. S 40°37'30"	9,000 ft. S 40°42'30"
LONGITUDE	2,950 ft. W 80°25'00"	8,120 ft. W 80°15'00"	2,950 ft. W 80°22'30"	3,950 ft. W 80°22'30"	5,100 ft. W 80°22'30"	1,000 ft.W 80°22'30"	8,000 ft. W 80°02'30"	500 ft. W 79°22'30"	3,790 ft. W 78°55'00"	4,680 ft. W 78°57'30"
DATE COMPLETED	9-16-81	9-25-81	9-10-81	10-7-81	10-9-81	9-12-81	10-22-81	8-23-80	1-29-81	5-12-81
ELEVATION	935 GR	1245 GR	908 GR	862 GR	962 GR	1025 GR	1290 GR	2136 GR	1860 GR	1622 GR
TULLY	1876-	2164-	1780-	1720-	1870-	2035-	*2362-	7014-	*7347-	6888-
ONONDAGA LIMESTONE	2044-	2366-	1950-	1882-	2040-	2210-	2578-	7630- Gas @7652-7690 (Huntersville)	8120- Gas @8147-8159; and 8334-8342	7564-
ONONDAGA CHERT										7576-
ORISKANY		2554-		2140-			Absent	7788-	8236-	7685- Gas @7685-7694
HELDERBERG								7878-	8270-	
KEYSER-BASS ISLAND						2476-	2840-			
SALINA	2642-		2560-	2500-	2650-	2550-	2911-			
GUELPH-LOCKPORT	2910-	3227-	2780-	2764-	2850-	3056-	3361-			
BLACK WATER										
CLINTON						3300-	3688-			
IRONDEQUOIT	3242-	3574-	3166-	3103-	3256-		3749-			
MEDINA	3304- Gas @3309-3373	3620- Gas @3651-3706	3210- Gas @3236-3304	3146- Gas @3162-3243	3310- Gas @3331-3404	3424- Gas @3478-3517	3788- Gas @3816-3865			
WHIRLPOOL	3450-	3778-	3354-	3290-	3452-		3947-			
QUEENSTON	3460-	3784-	3364-	3310-			3955-			
TOTAL DEPTH	3478	3795	3386	3354	3446	3616	4098	7930	8384	7694
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Helderberg	Helderberg	Oriskany
RESULT	250 Mcf AF 950 psi/24 hrs. development Bushnell-Lexington pool Conneaut field	1,100 Mcf AF 1,175 psi/2 hrs. extension Pageville pool Conneaut field	2,200 Mcf AF 970 psi/1 day development Bushnell-Lexington pool Conneaut field	860 Mcf AF 940 psi/24 hrs. development ushnell-Lexington pool Conneaut field	400 Mcf AF 910 psi/1 day development ushnell-Lexington pool Conneaut field	1,100 Mcf AF 990 psi/2 days development Lundys Lane pool Conneaut field	160 Mcf AF 1,150 psi/7 days development Edinboro North field	280 Mcf AF 2,300 psi/56 hrs. Shallower pool discovery DuPree pool Mill Run field	304 Mcf Natural 300 Mcf AF 2,875 psi/74 hrs. extension Pineton pool Strongstown field	2,710 Mcf AF 3,975 psi/24 hrs. Deeper pool discovery Wandin pool Commodore field

COUNTY Permit Number		McKean 39885	Mercer 20171	Mercer 20172	Mercer 20179	Mercer 20180	Mercer 20183	Mercer 20187	Mercer 20200	Mercer 20204	Mercer 20205
NAME OF WELL		Alice Shurwin #1	Joseph, Rose & John Shine #1	Frederick A. Ohl #1	J. V. Luca #1	Matey-Kernisky Unit #1	Kaikis-Metz Unit #1	Rosen #1	J. & S. Miller #1	Rosen #3	Steve Bielobocky #1
OPERATOR		Pennzoil Company	David Gaon & Spencer Stillman	Energy Services/ R. H. Hutcheson	Cyclops Corporation	Cyclops Corporation	Cyclops Corporation	David Gaon & Spencer Stillman	Mitchel Energy Corporation #74	David Gaon & Spencer Stillman	David Gaon & Spencer Stillman
TOWNSHIP		Lafayette	Greene	West Salem	Shenango	Shenango	Shenango	Greene	Deer Creek	Greene	West Salem
QUADRANGLE & MAP NUMBER		Bradford 15 **Cyclone	Shenango A 13 **Greenville West	Shenango E 14 **Sharpsville C	Neshannock A 10 **Sharon East D	Neshannock A 11 **Sharon East D	Neshannock A 12 **Sharon East D	Shenango A 16 **Greenville West	Stoneboro B 30 **New Lebanon A	Shenango B 17 **Greenville West	Shenango D 18 **Sharpsville B
LATITUDE		12,300 ft. S 41°50'00"	10,900 ft. S 41°30'00"	2,350 ft. S 41°22'30"	13,000 ft. S 41°12'30"	12,000 ft. S 41°12'30"	10,850 ft. S 41°12'30"	6,550 ft. S 41°30'00"	6,550 ft. S 41°30'00"	11,200 ft. S 41°30'00"	2,650 ft. S 41°22'30"
LONGITUDE		9,200 ft. W 78°35'00"	2,850 ft. W 80°25'00"	11,250 ft. W 80°22'30"	3,000 ft. W 80°27'30"	4,800 ft. W 80°27'30"	7,150 ft. W 80°27'30"	930 ft. W 80°25'00"	7,600 ft. W 80°05'00"	10,900 ft. W 80°22'30"	9,700 ft. W 80°25'00"
DATE COMPLETED		10-23-81	1-18-79	2-2-79	10-31-79	10-3-79	10-17-79	12-16-80	1-1-81	2-5-81	2-17-81
ELEVATION		2126 GR	1004 KB	1008 KB	989 GR	975 GR	998 GR	1004 GR	1472 GR	1027 GR	1176 GR
TULLY		4880-			Absent	Absent	Absent	Absent	*3552-	*2720-	*3063-
ONONDAGA	LIMESTONE	5400-	2860-	3102-	*3464-	*3420-	*3416-	*2892-	3742-	2926-	3218-
	CHERT										
ORISKANY			3068-	3299-	3650-	3608-	3610-	3098-	3912-	3136-	3417-
HELDERBERG		5470-			3666-	3624-	3627-	3109-	3941-		3438-
KEYSER-BASS ISLAND					3724-	3679-	3686-	3152-	3977-	3150-	3536-
SALINA					3848-	3806-	3802-	3204-	4035-	3240-	3572-
GUELPH-LOCKPORT					4650-	4612-	4662-	3890-	4742-	3944-	4274-
BLACK WATER											
CLINTON			4370-		5030-	4990-	4937-	4260-	5105-	4292-	4655-
IRONDEQUOIT			4328-	4620-	5093-	5052-	5040-	4312-	5160-	4348-	4709-
MEDINA			Gas @4409-4527	4690- Gas @4710-4754	5147- Gas @5249-5376	5104- Gas @5190-5224	5093- Gas @5210-5261	4350- Gas @4449-4559	5202- Gas @5239-5420	4402- Gas @4462-4499	4776- Gas @4831-4881
WHIRLPOOL			4520-		5368-	5326-	5318-	4550-	5410-	4586-	4962-
QUEENSTON			4531-		5380-	5338-	5328-	4563-	5422-	4600-	4976-
TOTAL DEPTH		5696	4722	483[illegible]	5445	5396	5397	4610	5522	4630	5090
DEEPEST FORMATION REACHED		Helderberg	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		Dry Deeper pool test Bradford field	1,100 Mcf AF 1,500 psi/3 days New field discovery Jamestown field	680 Mcf AF 1,425 psi/3 days Deeper pool discovery Good Hope pool New Hamburg field	1,540 Mcf AF 1,500 psi/5 days extension Wheatland field	1,500 Mcf AF 1,500 psi/3 days extension Wheatland field	1,040 Mcf AF 1,500 psi/3 days development Wheatland field	190 Mcf AF 1,280 psi/8 days extension Jamestown field	715 Mcf AF 1,150 psi/26 days extension Kantz Corners field	1,030 Mcf AF 1,100 psi/5 days extension Jamestown field	550 Mcf AF 1,300 psi/3 days New pool discovery West Salem pool Maysville field

Figure 32. (Continued)

COUNTY Permit Number	Mercer 20214	Mercer 20215	Mercer 20217	Mercer 20222	Mercer 20224	Mercer 20239	Mercer 20240	Mercer 20241	Mercer 20243	Mercer 20251
NAME OF WELL	Herald Heltzel #1	Herald Heltzel #2	Ida McCaughtry #1	John Heltzel #1	R. & O. Srock #1	Crist Kurtz #1	Victor Babyak #2	P. Schneider #2	E. & J. Peterson #1	Edward Greer #1
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Mitchell Energy Corporation #73	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cyclops Corporation	Mitchell Energy Corporation #99	Cabot Oil & Gas Corporation
TOWNSHIP	French Creek	French Creek	French Creek	French Creek	Greene	Deer Creek	French Creek	South Pymatuning	French Creek	French Creek
QUADRANGLE & MAP NUMBER	Stoneboro C 33 **New Lebanon B	Stoneboro C 34 **New Lebanon B	Stoneboro C 49 **New Lebanon B	Stoneboro C 37 **New Lebanon B	Shenango A 21 **Greenville West	Stoneboro B 58 **Hadley	Stoneboro C 50 **New Lebanon B	Kinsman 32 **Orangeville I	Stoneboro 61 **New Lebanon F	Stoneboro C 45 **New Lebanon B
LATITUDE	6,900 ft. S 41°30'00"	8,000 ft. S 41°30'00"	5,150 ft. S 41°30'00"	9,000 ft. S 41°30'00"	9,550 ft. S 41°30'00"	9,100 ft. S 41°30'00"	5,400 ft. S 41°30'00"	2,350 ft. S 41°17'30"	6,850 ft. S 41°27'30"	9,600 ft. S 41°30'00"
LONGITUDE	8,700 ft. W 80°02'30"	6,950 ft. W 80°02'30"	4,600 ft. W 80°02'30"	4,500 ft. W 80°02'30"	2,500 ft. W 80°27'30"	550 ft. W 80°07'30"	7,400 ft. W 80°02'30"	3,050 ft. W 80°30'00"	2,850 ft. W 80°00'00"	11,050 ft. W 80°02'30"
DATE COMPLETED	4-18-81	4-9-81	4-29-81	5-7-81	4-22-81	8-6-81	7-26-81	7-2-81	7-26-81	7-9-81
ELEVATION	1410 GR	1350 GR	1350 GR	1415 GR	1124 GR	1385 GR	1400 GR	1111 GR	1443 GR	1465 GR
TULLY	*3572-	*3533-	*3516-	*3602-		*3414-		*3003-	*3762-	*3628-
ONONDAGA LIMESTONE	3774-	3734-	3722-	3808-	2924-	3600-		3210-	3973-	3827-
CHERT										
ORISKANY	3932-	3891-	3880-	3961-		3771-		3418-	3984-	3984-
HELDERBERG	3952-	3910-		3979-				3433-	4124-	
KEYSER-BASS ISLAND	4000-	3946-	3900-	4016-		3791-		3476-	4148-	4000-
SALINA	4058-	4016-	4005-	4090-	3241-	3894-		3590-	4250-	4109-
GUELPH-LOCKPORT	4732-	4692-	4664-	4756-	4064-	4622-		4362-	4780-	4792-
BLACK WATER										
CLINTON	5091-	5043-	5020-	5126-		4990-	*5065-	4752-		5151-
IRONDEQUOIT	5152-	5108-	5084-	5186-	4386-	5043-	5115-	4805-	5458-	5214-
MEDINA	5210- Gas @5215-5357	5172- Gas @5214-5280	5142- Gas @5186-5285	5244- Gas @5291-5360	4436- Gas @4438-4604	5109- Gas @5121-5224	5186- Gas @5188-5334	4876- Gas @4940-4983	5490- Gas @5477-5649	5276- Gas @5314-5428
WHIRLPOOL	5396-	5354-	5327-	5429-	4600-	5293-	5370-	5070-	5647-	5458-
QUEENSTON	5407-	5367-	5337-	5441-	4606-	5305-	5380-	5081-	5660-	5469-
TOTAL DEPTH	5511	5468	5450	5529	4717	5378	5457	5145	5700	5542
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	4,507 Mcf AF 1,450 psi/72 hrs. development Kantz Corners field	5,100 Mcf AF 1,450 psi/72 hrs. extension Kantz Corners field	2,530 Mcf AF 1,375 psi/72 hrs. extension McDaniels pool Cochranton field	4,800 Mcf AF 1,400 psi/72 hrs. extension Kantz Corners field	690 Mcf AF 1,250 psi/38 hrs. extension Jamestown field	3,391 Mcf AF 1,380 psi/72 hrs. development Kantz Corners field	2,023 Mcf AF 1,380 psi/72 hrs. development Kantz Corners field	1,300 Mcf AF 1,500 psi/72 hrs development Sharon Deep pool Sharon field	512 Mcf AF 1,080 psi/195 hrs Deeper pool test French Creek pool Utica field	2,086 Mcf AF 1,330 psi/72 hrs. extension Kantz Corners field

COUNTY Permit Number	Mercer 20253	Mercer 20255	Mercer 20259	Mercer 20263	Mercer 20267	Mercer 20278	Mercer 20281	Mercer 20289	Mercer 20297	Mercer 20312
NAME OF WELL	F. Schneider #1	M. Swallow #1	John R. Schneider #3-S	Theodore Gates #1	Andrew Stallsmith #1	D. Sump Unit #1	Ura Miller #1	H. Coryea #1-A	Elisha Free #1	Ura Miller #2
OPERATOR	Cyclops Corporation	Cyclops Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cyclops Corporation	Cabot Oil & Gas Corporation	Cyclops Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation
TOWNSHIP	South Pymatuning	South Pymatuning	Deer Creek	Deer Creek	Deer Creek	South Pymatuning	Deer Creek	South Pymatuning	Deer Creek	Deer Creek
QUADRANGLE & MAP NUMBER	Kinsman 31 **Orangeville I	Shenango 19 **Sharpsville G	Stoneboro 64 **New Lebanon A	Stoneboro B 51 **New Lebanon A	Stoneboro 8 59 **Hadley C	Shenango G 20 **Sharpsville G	Stoneboro 66 **Hadley C	Kinsman 33 **Orangeville F	Stoneboro 54 **Hadley	Stoneboro 55 **New Lebanon
LATITUDE	1,050 ft. S 41°17'30"	100 ft. S 41°17'30"	5,600 ft. S 41°30'00"	7,500 ft. S 41°30'00"	10,200 ft. S 41°30'00"	4,250 ft. S 41°17'30"	12,500 ft. S 41°30'00"	14,200 ft. S 41°20'00"	14,800 ft. S 41°30'00"	12,800 ft. S 41°30'00"
LONGITUDE	2,050 ft. W 80°30'00"	9,550 ft. W 80°27'30"	5,500 ft. W 80°05'00"	8,500 ft. W 80°05'00"	2,600 ft. W 80°07'30"	5,900 ft. W 80°27'30"	1,200 ft. W 80°07'30"	600 ft. W 80°30'00"	500 ft. W 80°07'30"	10,100 ft. W 80°05'00"
DATE COMPLETED	7-13-81	8-3-81	6-17-81	7-17-81	8-2-81	8-12-81	9-16-81	7-24-81	9-26-81	10-4-81
ELEVATION	1061 GR	998 GR	1450 GR	1450 GR	1420 GR	1009 GR	1400 GR	998 GR	1410 GR	1440 GR
TULLY	*2932-	*2982-	*3544-	3496-	*3444-	*2932-	*3478-		*3506-	*3526-
ONONDAGA LIMESTONE CHERT	3144-	3112-	3736-	3683-	3619-	3092-	3656-	3092-	3684-	3708-
ORISKANY	3353-	3320-	3906-	3852-	3790-	3350-	3824-	3302-	3847-	3874-
HELDERBERG	4960-	3340-		3872-	3808-	3370-		3312-	3864-	3892-
KEYSER-BASS ISLAND	3406-	3376-	3927-		3846-		3842-		3900-	3934-
SALINA	3520-	3492-	4030-	4176-	3916-	3574-	3954-	3466-	3985-	4004-
GUELPH-LOCKPORT BLACK WATER	4300-	4250-	4720-	4798-	4656-	4400-	4696-	4346-	4726-	4790-
CLINTON	4648-	4602-	5090-	5049-	5017-	4648-	5074-	4586-	5076-	5093-
IRONDEQUOIT	4730-	4682-	5148-	5108-	5076-	4734-	5126-	4670-	5144-	5158-
MEDINA WHIRLPOOL	4800- Gas @4873-4906 4992-	4759- Gas @4833-4871 4953-	5210- Gas @5256-5320 5394-	5165- Gas @5207-5326 5352-	5136- Gas @5188-5246 5322-	4808- Gas @4879-4916 5000-	5184- Gas @5235-5296 5364-	4739- Gas @4787-4840 4930-	5198- Gas @5252-5319 5388-	5218 Gas @5267-5335 5400-
QUEENSTON	5002-	4966-	5406-	5263-	5332-	5010-	5375-	4944-	5399-	5410-
TOTAL DEPTH	5075	5036	5466	5448	5390	5092	5458	5008	5474	5438
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	962 Mcf AF 1,500 psi/72 hrs. extension Sharon Deep pool Sharon field	1,500 Mcf AF 1,600 psi/7 days extension Sharon Deep pool Sharon field	1,490 Mcf AF 1,400 psi/72 hrs development Kantz Corners field	3,391 Mcf AF 1,300 psi/72 hrs development Kantz Corners field	3,391 Mcf AF 1,240 psi/72 hrs extension Kantz Corners field	1,400 Mcf AF 1,600 psi/7 days extension Sharon Deep pool Sharon field	1,476 Mcf AF 1,250 psi/72 hrs. development Kantz Corners field	1,000 Mcf AF 1,475 psi/72 hrs. development Sharon Deep pool Sharon field	2,000 Mcf AF 1,425 psi/72 hrs. extension Kantz Corners field	1,200 Mcf AF 1,375 psi/72 hrs. extension Kantz Corners field

Figure 32. (Continued)

COUNTY Permit Number	Mercer 20313	Mercer 20322	Mercer 20323	Mercer 20338	Somerset 20100	Somerset 20101	Somerset 20102	Somerset 20103	Somerset 20106	Somerset 20107
NAME OF WELL	Donald S. Ritter #2	Baird Wallace #1	Baird Wallace #2	John W. Moore #1	Commonwealth of PA, Tract 221 #1	Eldon H. Barkey Gas Unit #1	Ralph N. Hemminger #1	Commonwealth of PA, Tract 222 #1	Earl H. Weimer #3	David Mankamyer Gas Unit #1
OPERATOR	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Cabot Oil & Gas Corporation	Amoco Production Company	Amoco Production Company	Amoco Production Company	Amoco Production Company	Amoco Production Company	Amoco Production/ Ashtola Production
TOWNSHIP	French Creek	French Creek	French Creek	French Creek	Ogle	Lincoln	Somerset	Ogle	Milford	Somerset
QUADRANGLE & MAP NUMBER	Stoneboro 56 **New Lebanon	Stoneboro 67 **New Lebanon C	Stoneboro 57 **New Lebanon	Stoneboro 68 **New Lebanon C	Windber F 17 **Windber	Somerset H 42 **Somerset D	Somerset H 43 **Bakersville I	Windber B 16 **Windber C	Meyersdale R 24 **Rockwood C	Somerset F 45 **Somerset
LATITUDE	8,000 ft. S 41°30'00"	5,300 ft. S 41°30'00"	10,250 ft. S 41°30'00"	10,600 ft. S 41°30'00"	8,875 ft. S 40°12'30"	2,150 ft. S 40°05'00"	14,550 ft. S 40°02'30"	11,300 ft. S 40°15'00"	5,200 ft. S 40°00'00"	14,350 ft. S 40°05'00"
LONGITUDE	9,950 ft. W 80°00'00"	11,300 ft. W 80°00'00"	2,600 ft. W 80°02'30"	10,150 ft. W 80°00'00"	4,900 ft. W 78°45'00"	5,650 ft. W 79°05'00"	9,550 ft. W 79°07'30"	175 ft. W 78°45'00"	6,270 ft. W 79°07'30"	11,050 ft. W 79°00'00"
DATE COMPLETED	9-27-81	10-31-81	10-13-81	10-22-80	7-4-80	8-4-80	9-13-80	10-14-80	10-22-80	11-20-80
ELEVATION	1290 GR	1325 GR	1440 GR	1410 GR	2309 GR	1939 KB	2147 GR	2494 KB	2190 GR	2198 GR
TULLY		*3509-	*3652-	*3628-	*8870-			*8018-?	7932-	8225-
ONONDAGA LIMESTONE CHERT		3718-	3858-	3836-	8983	8368- Gas @8408-8506 8394-	8810- Gas @8896-9091 8822-	9030- 9070-	8791- Gas @8886-9082 8818-	9140- 9150-
ORISKANY		3870-	9140-	3981-	9025-	8510-	8926- Gas	9140-		9260-
HELDERBERG		9285-	4025-	3997-	9072- Gas	8681-	8581-	9216-		9408-
KEYSER-BASS ISLAND SALINA		3912- 3994-	4038- 4138-	4022- 4117-						
GUELPH-LOCKPORT BLACK WATER		4660-	4812-	4794-						
CLINTON IRONDEQUOIT	*5001- 5063-	5004- 5074-	5167- 5241-	5156- 5224-						
MEDINA WHIRLPOOL	5116- Gas @5173-5269 5254-	5136- Gas @5187-5279 5321-	5296- Gas @5358-5435 5481-	5276- Gas @5334-5421 5460-						
QUEENSTON	5272-	5330-	5492-	9403-						
TOTAL DEPTH	5320	5410	5563	5528	9321	8731	9141	9280	9243	9436
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Helderberg	Helderberg	Helderberg	Helderberg	Oriskany	Helderberg
RESULT	4,700 Mcf AF 1,400 psi/72 hrs. extension Kantz Corners field	1,500 Mcf AF 1,200 psi/72 hrs. development McDaniels pool Cochranton field	1,032 Mcf AF 1,350 psi/72 hrs. development Kantz Corners field	2,500 Mcf AF 1,300 psi/72 hrs. development Kantz Corners field	2,000 Mcf AF 4,546 psi/97 hrs. New field discovery Brier Knob field	115 Mcf AF 2,950 psi/48 hrs. New pool discovery Quemahoning pool Roswell field	450 Mcf Natural 1,250 Mcf AF 2,900 psi/108 hrs. extension Somerset West field	Dry and abandoned New field wildcat	470 Mcf Natural 2,600 Mcf AF 4,328 psi/240 hrs. New pool discovery Weimer pool Kimmel field	Dry and abandoned extension Somerset East field

COUNTY Permit Number	Somerset 20110	Somerset 20111	Somerset 20113	Somerset 20114	Tioga 20104	Warren 26966	Warren 26967	Warren 26972	Warren 26998	Warren 27103
NAME OF WELL	Edward E. Beener Gas Unit #1	Harry A. Landis Unit #1	William Schmidt #1	Matthew B. Luce Gas Unit "B" #1	State of PA Tract 319 #1-A	Anthony Lampbert #1	Abe Byler #1	Daniel B. Ferman #1	Joe Byler #1	Harry Sarvis #1
OPERATOR	Amoco Production Company	Amoco Production Company	Amoco Production Company	Amoco Production Company	Wilmoth Interests, Incorporated	Monroe Resources Ltd. #5	Monroe Resources Ltd. #3	St. Lawrence Exploration Corp.	Monroe Resources Ltd. #4	Monroe Resources Ltd.
TOWNSHIP	Milford	Somerset	Middlecreek	Milford	Gaines	Sugar Grove	Sugar Grove	Sugar Grove	Sugar Grove	Sugar Grove
QUADRANGLE & MAP NUMBER	Meyersdale A 23 **Rockwood E	Somerset F 46 **Somerset	Donegal I 37 **Seven Springs	Meyersdale A 25 **Rockwood B	Gaines I 119 **Sabinsville I	Youngsville B 11 **Sugar Grove A	Youngsville B 12 **Lottsville C	Youngsville B 17 **Sugar Grove A	Youngsville B 27 **Sugar Grove A	Youngsville B 13 **Sugar Grove A
LATITUDE	8,500 ft. S 39°57'30"	12,350 ft. S 40°05'00"	13,800 ft. S 40°02'30"	14,150 ft. S 40°00'00"	10,850 ft. S 41°57'30"	6,225 ft. S 42°00'00"	7,025 ft. S 42°00'00"	8,700 ft. S 42°00'00"	6,900 ft. S 42°00'00"	4,850 ft. S 42°00'00"
LONGITUDE	8,320 ft. W 79°10'00"	3,900 ft. W 79°00'00"	3,500 ft. W 79°15'00"	8,350 ft. W 79°10'00"	5,550 ft. W 77°30'00"	9,400 ft. W 79°20'00"	4,200 ft. W 79°22'30"	9,540 ft. W 79°20'00"	11,200 ft. W 79°20'00"	3,550 ft. W 79°20'00"
DATE COMPLETED	11-17-80	2-8-81	3-5-81	4-8-81	1-23-81	3-2-79	2-5-79	11-3-78	4-21-79	5-22-79
ELEVATION	2106 GR	2087 GR	2376 GR	2094 GR	2220 GR	1556 KB	1624 KB	1627 GR	1600 GR	1436 KB
TULLY				7951-	5903-		*3006-	*3006-	*2970-	
ONONDAGA LIMESTONE	8425-			8690-	6766-	*3204-	3292-	3330-	3260-	
ONONDAGA CHERT	8456-	8964-	8048-Gas	8710-						
ORISKANY	8667-	9065- Gas @9057-9270	8160-Gas	8830-	6773-	3369- Bois Blanc?	Absent	Absent		
HELDERBERG	8842-	9228-	8264-	8980-	6798-	Absent	Absent	3492-	3421-	
KEYSER-BASS ISLAND						3376-	3459-	3520-	3436-	
SALINA						3426-	3516-	3550-	3478-	
GUELPH-LOCKPORT						4006-	4030-	4138-	4061-	*3986-
BLACK WATER										
CLINTON						4266-	4355-	4399-	4316-	4158-
IRONDEQUOIT						4344-	4434-	4480-	4400-	4254-
MEDINA						4386- Gas @4414-4503	4472- Gas @4516-4649	4523-	4450- Gas @4512-4601	4292- Gas @4360-4483
WHIRLPOOL						4547-	4636-	4676-	4600-	4469-
QUEENSTON						4564-	4653-	4695-	4614-	4488-
TOTAL DEPTH	8963	9270	8335	9035	6832	4613	4810	4795	4745	4546
DEEPEST FORMATION REACHED	Helderberg	Helderberg	Helderberg	Helderberg	Helderberg	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	2,000 Mcf AF 3,502 psi/30 days extension Rockwood field	1,150 Mcf AF 4,350 psi/377 hrs. extension Somerset East field	1,200 Mcf AF 3,143 psi/91 hrs. New pool discovery Laurel Hill pool Seven Springs field	210 Mcf AF 4,180 psi/21 days extension Kimmel field	Dry hole New field wildcat	989 Mcf Natural 1,876 Mcf AF 1,335 psi/? development Stillwater field	512 Mcf AF 1,285 psi/? development Freehold pool Stillwater field	Dry hole Stillwater field	365 Mcf AF 1,120 psi/48 hrs. development Stillwater field	1,200 Mcf AF 1,328 psi/? extension Stillwater field

Figure 32. (Continued)

COUNTY Permit Number		Warren 27867	Warren 28014	Warren 28019	Warren 28020	Warren 28129	Warren 28184	Warren 28209	Warren 28356	Warren 28386	Warren 28407
NAME OF WELL		Levi Shetler #1	Walter Langford #1	John Sweeney #1	Robert Carlson #1	Max Warner #1	Paul T. Stroup #1	Levi Shetler #2-A	David Curtis #2	John Sweeney #2	Robert Weaver #1
OPERATOR		Monroe Resources Ltd.	Cumberland Oil Corporation	Monroe Resources Ltd.	Monroe Resources Ltd.	Monroe Resources Ltd.	U. S. Energy Development Co.	Benchmark Oil Inc.	U.S. Energy Development Co.	Monroe Resources Ltd.	U. S. Energy Development Co.
TOWNSHIP		Freehold	Freehold	Sugar Grove	Sugar Grove	Sugar Grove	Columbus	Freehold	Columbus	Sugar Grove	Pittsfield
QUADRANGLE & MAP NUMBER		Youngsville B 14 **Lottsville C	Youngsville B 26 **Lottsville C	Youngsville B 15 **Sugar Grove A	Youngsville B 20 **Sugar Grove A	Youngsville B 21 **Lottsville C	Corry C 91 **Columbus E	Youngsville B 22 **Lottsville C	Corry C 106 **Columbus E	Youngsville B 28 **Sugar Grove A	Youngsville E 29 **Pittsfield
LATITUDE		8,500 ft. S 42°00'00"	8,300 ft. S 42°00'00"	2,850 ft. S 42°00'00"	1,500 ft. S 42°00'00"	850 ft. S 42°00'00"	4,800 ft. S 41°57'30"	10,300 ft. S 42°00'00"	5,675 ft. S 41°57'30"	850 ft. S 42°00'00"	5,700 ft. S 41°50'00"
LONGITUDE		5,550 ft. W 79°22'30"	9,700 ft. W 79°22'30"	6,400 ft. W 79°20'00"	4,150 ft. W 79°20'00"	3,425 ft. W 79°22'30"	11,200 ft. W 79°32'30"	8,750 ft. W 79°22'30"	4,800 ft. W 79°32'30"	6,650 ft. W 79°20'00"	400 ft. W 79°25'00"
DATE COMPLETED		5-22-80	6-10-80	11-20-80	9-26-80	10-10-80	7-28-80	7-23-80	12-2-80	10-3-80	11-3-80
ELEVATION		1702 KB	1760 GR	1635 KB	1540 GR	1675 GR	1432 GR	1740 GR	1425 GR	1625 GR	1280 GR
TULLY			3154-			*3000-	*2766-	3178-			*3205-
ONONDAGA	LIMESTONE		3621-	*3288-	*3140-	3286-	3026-	3468-	*3064-	*3235-	3468-
	CHERT										
ORISKANY				Absent	Absent	3460-	Absent		3234-	3387-	
HELDERBERG				3458-							
KEYSER-BASS ISLAND				3474-	3311-	3468-	3206-		3246-	3404-	3590-
SALINA				3511-	3361-	3516-	3266-		3301-	3456-	3660-
GUELPH-LOCKPORT			3998-	4086-	3862-	4026-		3950-		3956-	4320-
BLACK WATER											
CLINTON				4348-	4202-	4354-				4294-	4596-
IRONDEQUOIT		*4520-	4598-	4429-	4284-	4435-	4168-	4619-	4190-	4377-	4671-
MEDINA		4560- Gas @4607-4733	4613- Gas @4660-4812	4465- Gas @4573-4634	4321- Gas @4372-4489	4478- Gas @4520-4647	4214- Gas @4246-4379	4630- Gas @4706-4825	4230- Gas @4285-4399	4419- Gas @4454-4582	4719- Gas @4765-4835
WHIRLPOOL		4719-	4798-	4624-	4475-	4637-	4369-	4814-	4393-	4569-	4882-
QUEENSTON		4736-	4817-	4641-	4494-	4652-	4382-	4832-	4409-	4584-	4817-
TOTAL DEPTH		4818	4817	4706	4629	4747	4487	4926	4409	4668	5001
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT		487 Mcf AF 1,310 psi/48 hrs. extension Freehold pool Stillwater field	550 Mcf AF 1,180 psi/? development Freehold pool Stillwater field	4,980 Mcf AF 1,320 psi/48 hrs. extension Stillwater field	1,350 Mcf AF 1,310 psi/48 hrs. extension Stillwater field	100 Mcf Natural 16,000 Mcf AF 1,365 psi/48 hrs. extension Stillwater field	50 Mcf Natural 505 Mcf AF 1,205 psi/3 days New pool discovery Stroup pool Brokenstraw field	550 Mcf AF 1,180 psi/? development Freehold pool Stillwater field	2,150 Mcf AF 1,260 psi/72 hrs. extension Whites Run pool Columbus field	3,100 Mcf AF 1,365 psi/48 hrs. development Stillwater field	20 Mcf Natural 100 Mcf AF 860 psi/3 days New pool discovery Blue Eye pool Youngsville field

COUNTY Permit Number	Warren 28445	Warren 28494	Warren 28495	Warren 28497	Warren 28499	Warren 28588	Warren 28591	Warren 28592	Warren 28593	Warren 28915
NAME OF WELL	Moses Yoder #2	F. & E. Nichols #1	M. J. Wojtowicz #1	M. Z. Lay #1	M. J. Wojtowicz #5	James Gourley #3	James Gourley #1	James Gourley #2	James Gourley #4	Frank Savko #1
OPERATOR	Arrowhead Gas Producers	Berea Oil & Gas Corporation	Berea Oil & Gas Corporation	Berea Oil & Gas Corporation	Berea Oil & Gas Corporation	Monroe Resources Ltd.	Monroe Resources Ltd.	Monroe Resources Ltd.	Monroe Resources Ltd.	U.S. Energy Development Corp.
TOWNSHIP	Freehold	Eldred	Eldred	Eldred	Eldred	Sugar Grove	Sugar Grove	Sugar Grove	Sugar Grove	Columbus
QUADRANGLE & MAP NUMBER	Youngsville B 10 **Lottsville F	Corry H 96 **Spring Creek G	Corry H 97 **Spring Creek G	Corry H 105 **Spring Creek G	Corry I 99 **Spring Creek	Youngsville B 30 **Lottsville C	Youngsville B 31 **Lottsville C	Youngsville B 32 **Lottsville	Youngsville B 16 **Lottsville	Corry C 110 **Columbus F
LATITUDE	3,150 ft. S 41°57'30"	3,290 ft. S 41°47'30"	3,790 ft. S 41°47'30"	9,990 ft. S 41°47'30"	3,600 ft. S 41°47'30"	13,300 ft. S 42°00'00"	11,250 ft. S 42°00'00"	9,250 ft. S 42°00'00"	14,950 ft. S 42°00'00"	2,800 ft. S 41°57'30"
LONGITUDE	7,950 ft. W 79°22'30"	7,600 ft. W 79°35'00"	3,800 ft. W 79°35'00"	1,000 ft. W 79°35'00"	7,250 ft. W 79°32'30"	4,600 ft. W 79°22'30"	3,550 ft. W 79°22'30"	3,250 ft. W 79°22'30"	4,950 ft. W 79°22'30"	6,700 ft. W 79°30'00"
DATE COMPLETED	10-23-80	1-31-81	2-11-81	2-29-81	2-19-81	12-20-80	1-22-81	1-14-81	1-7-81	2-10-81
ELEVATION	1881 DF	1770 KB	1769 KB	1715 GR	1764 GR	1770 GR	1683 GR	1625 GR	1855 GR	1434 GR
TULLY	3380-	*3570-	*3590-	*3628-	*3620-		*3122-		*3334-	*2776-
ONONDAGA LIMESTONE	3650-	3830-	3851-	3892-	3887-	*3484-	3410-	*3326-	3615-	3061-
ONONDAGA CHERT										
ORISKANY		Absent	Absent	Absent	Absent	3634-	3562-	3480-	Absent	3210-
HELDERBERG						3647-	3572-	3488-		3226-
KEYSER-BASS ISLAND		3974-	3996-	4029-	4030-	3662-	3588-	3508-	3777-	3250-
SALINA	4100-	4036-	4060-	4094-	4096-	3707-	3630-	3552-	3838-	3296-
GUELPH-LOCKPORT BLACK WATER	4060±	4657-	4670-	4710-	4708-		4139-	4060-	4348-	3794-
CLINTON	4640-	4961-	4978-	5020-	5018-	4550-	4470-	4392-	4674-	4112-
IRONDEQUOIT	4812-	5030-	5040-	5088-	5087-	4623-	4553-	4470-	4755-	4188-
MEDINA WHIRLPOOL	4860- Gas @4897-5012 5003-	5073- Gas @5169-5247 5240-	5097- Gas @5129-5262 5254-	5132- Gas @5305-5308	5141- Gas @5193-5302	4682- Gas @4710-4841 4830-	4601- Gas @4644-4764 4754-	4522- Gas @4567-4683 4674-	4798- Gas @4845-4975 4960-	4230- Gas @4275-4404 4395-
QUEENSTON	5021-	5249-	5264-	5314-	5307-	4847-	4772-	4691-	4977-	4409-
TOTAL DEPTH	5021	5366	5412	5447	5453	4897	4837	4810	5060	4409
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston
RESULT	500 Mcf Natural 5,100 Mcf AF 1,290 psi/? extension Savko pool Stillwater field	4 Mcf Natural 280 Mcf AF 1,140 psi/2 hrs. New field discovery County Line field	5 Mcf Natural 516 Mcf AF 1,220 psi/4 hrs. extension County Line field	497 Mcf AF 1,190 psi/7 days Deeper pool discovery Three Bridge pool Selkirk field	962 Mcf AF 1,200 psi/7 days Deeper pool discovery Trimm pool Sanford field	25 Mcf Natural 419 Mcf AF 1,266 psi/48 hrs. development Savko pool Stillwater field	30 Mcf Natural 1,269 Mcf AF 1,200 psi/48 hrs. extension Freehold pool Stillwater field	20 Mcf Natural 390 Mcf AF 1,260 psi/48 hrs. development Freehold pool Stillwater field	30 Mcf Natural 342 Mcf AF 1,250 psi/2 days extension Savko pool Stillwater field	2,930 Mcf AF 1,325 psi/48 hrs. New pool discovery Dewey Corners pool Columbus field

Figure 32. (Continued)

COUNTY Permit Number	Warren 29107	Warren 29109	Warren 29159	Warren 29260	Warren 29265	Warren 29975	Warren 30025	Warren 30059	Westmoreland 21705	Westmoreland 21883
NAME OF WELL	Carl Faust #1	William R. Hinsdale #1	William Saunders #1	John C. Hibner #1	Calvin Penley #1	Richard Giordan #1	J. R. Winans #1	Milo Koren #1	James T. Washnock #1	Ramaley #2
OPERATOR	Arrowhead Gas Producers, Inc.	Monroe Resources Ltd.	Arrowhead Gas Producers, Inc.	Texas Internat'l Petroleum Corp.	Texas Internat'l Petroleum Corp.	Monroe Resources Ltd.	Monroe Resources Ltd.	Monroe Resources Ltd.	Peoples Natural Gas Co. #5464	Ter-Ex, Incorporated
TOWNSHIP	Sugar Grove	Sugar Grove	Sugar Grove	Farmington	Farmington	Freehold	Freehold	Freehold	Ligonier	Derry
QUADRANGLE & MAP NUMBER	Youngsville B 18 **Lottsville	Youngsville A 34 **Sugar Grove A	Youngsville B 19 **Sugar Grove D	Youngsville C 24 **Sugar Grove C	Youngsville C 25 **Sugar Grove C	Youngsville A 35 **Lottsville B	Youngsville A 36 **Lottsville B	Youngsville A 37 **Lottsville B	Somerset D 44 **Ligonier H	Latrobe C 30 **Latrobe
LATITUDE	4,850 ft. S 41°57'30"	7,350 ft. S 42°00'00"	11,260 ft. S 41°57'30"	1,450 ft. S 42°00'00"	4,750 ft. S 42°00'00"	6,750 ft. S 42°00'00"	8,170 ft. S 42°00'00"	12,000 ft. S 42°00'00"	7,540 ft. S 40°10'00"	3,500 ft. S 40°22'30"
LONGITUDE	5,300 ft. W 79°22'30"	5,700 ft. W 79°20'00"	10,250 ft. W 79°20'00"	250 ft. W 79°15'00"	600 ft. W 79°15'00"	2,350 ft. W 79°25'00"	4,200 ft. W 79°25'00"	9,535 ft. W 79°25'00"	4,450 ft. W 79°10'00"	7,825 ft. W 79°22'30"
DATE COMPLETED	4-21-81	5-2-81	5-1-81	5-3-81	7-10-81	9-1-81	9-18-81	8-20-81	11-13-80	7-10-81
ELEVATION	1970 GR	1504 GR	1735 GR	1625 GR	1680 GR	1771 GR	1670 GR	1405 GR	2733 GR	1127 GR
TULLY	*3442-	*2906-	*3288-		3227-	*3124-	*2900-	*2911-	8240-	6917-
ONONDAGA LIMESTONE	3722-	3208-	3570-		3450-	3416-	3190-	3066-		7455-
ONONDAGA CHERT										7465- Gas
ORISKANY	Absent		Absent				Absent			7618-
HELDERBERG		3377-				3582-	3350-	3238-		7660-
KEYSER-BASS ISLAND	3874-	3389-	3712-			3608-	3380-	3254-		
SALINA	3930-	3434-	3771-		3924-?	3644-	3422-	3296-		
GUELPH-LOCKPORT	4444-	3945-	4314-	4200-	4154-	4150-	4020-	3789-		
BLACK WATER										
CLINTON	4764-	4286-	4638-		4523-	4470-	4237-	4124-		
IRONDEQUOIT	4859-	4370-	4720-		4612-	4550-	4326-	4204-		
MEDINA	4900- Gas @4998-5076	4419- Gas @4454-4579	4766- Gas @4832-4940	4650- Gas @4696-4697	4646- Gas @4691-4764	4602- Gas @4651-4766	4364- Gas @4512-4641	4246- Gas @4265-4416		
WHIRLPOOL	5068-	4562-	4934-	4710-	4810-	4756-	4534-	4410-		
QUEENSTON	5080-	4582-	4945-		4817-	4769-	4549-	4420-		
TOTAL DEPTH	5081	4655	4988	4762	4920	4880	4747	4510	9028	7730
DEEPEST FORMATION REACHED	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Queenston	Hamilton	Helderberg
RESULT	1,250 Mcf AF 10,300 Mcf AF 1,220 psi/? extension Savko pool Stillwater field	360 Mcf AF 1,215 psi/48 hrs. development Stillwater field	2,500 Mcf AF 1,075 psi/? Deeper pool discovery Pikes Rocks pool Youngsville field	660 Mcf AF 1,075 psi/4 hrs. extension Loucks pool Sugar Grove field	769 Mcf AF 1,120 psi/6 days New pool Loucks pool Sugar Grove field	1,422 Mcf AF 1,220 psi/48 hrs. development Freehold pool Stillwater field	1,379 Mcf AF 1,220 psi/48 hrs development Freehold pool Stillwater field	814 Mcf AF 1,175 psi/48 hrs. extension Freehold pool Stillwater field	Plugged and abandoned New field wildcat	300 Mcf Natural 3,150 psi/6 days New pool discovery Keystone pool New Alexandria field